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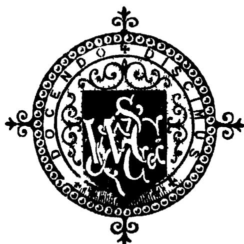
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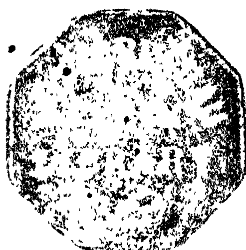
SCIENTIFIC TERMS.

BY

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LONDON AND GLASGOW:
WILLIAM COLLINS, SONS, AND COMPANY.
1879.



PREFACE.

THE present book is intended as a guide to the understanding of our popular scientific literature. Among the multitude of technical terms that are in existence, a selection had to be made, and the reader will therefore not expect absolute completeness, which, if possible, would have greatly increased the bulk, and thereby have impaired its convenience for ready use. Only the most commonly used, and most important words have accordingly been included. At the same time, accuracy with brevity has been specially aimed at. The fact that it has been found possible to include about 14,000 entries is the best evidence of the range and conciseness of the following pages.

August, 1878.

DICTIONARY

OF

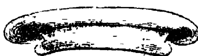
SCIENTIFIC TERMS.

Aardvark, (ärd'värk). [D. *aard*, earth, *vark*, pig.] An ant-eating quadruped of S. Africa =Orycteropus capensis.

Aardwolf, (ärd'wöölf). [D *aard*, earth.] A fox-like quadruped of S Africa=Proteles lalandii.

Aaron's Beard, (ā'ronz bērd)=Hypericum calycinum. An under-shrub, belonging to Hypericaceæ.

Abacus, (ab'a-kus). [L. *abacus*, table] 1. The upper plate of a column, beneath the architrave. 2. A calculating apparatus.


Abacus.

Abatis, (ab-a-tē'). [F. *abatis*, thrown down.] A breastwork of trees, or branches of trees.

Abbeville Flints, (ab'vēl). Rude spearheads, &c., found in the alluvium near Abbeville.

Abdar process, for separating silver from any copper ore in which it occurs.

Abdomen, (ab-dō'men). [L. *abdere*, to hide.] 1. The posterior portion of the human trunk, containing the intestines. 2. In insects, the portion of the body behind the legs, containing the viscera of nutrition and reproduction.

Abdominales, (ab-dom'i-nā-lēz). [Abdomen, *q v.*] Fishes having the ventral fins far behind the pectoral fins. (Ex , carp, salmon).

Abdominalia, (ab-dom-i-nā'lia). [Abdomen, *q.v.*] 1. A sub-division of Ascidioida (Molluscoida), in which the branchial sac is small in front. 2. A sub-division of Cirripedia (Articulata).

Abele, (a-bēl'). [L. *abies*; D. *abeel.*] Abel tree, white poplar, Populus alba, Dutch beech. A common European tree, about 80 ft. high.

Abelmoschus, (a-bel-mos'kus). [Arab name]= Hibiscus abelmoschus, Syrian mallow, musk mallow. A shrub, belonging to Malvaceæ.

Aberdavine, (a-ber-da-vīn')=Siskin=Fringilla spinus: a small migratory singing bird.

Aberration, (ab-er-ra'shon). [L. *ab*, from; *errare*, to wander]. Deviation of light rays from a true focus, caused either by the form of a lens=spherical A., resulting in an indistinct image; or by refrangibility of light= chromatic A., resulting in a coloured image.

Abies, (a'bi-es). [L. *abies*, from *abeo*, to rise, or *apios*, pear tree.] The fir tree: a genus of Abieteæ (Pinaceæ). *A. pectinata*, silver fir, gives Strasburg turpentine. *A. excelsa*, spruce fir. Tall, evergreen tree, common.

Abietine, (ab'i-e-tīn). [L. *abies*, the fir tree.] A resin obtained from turpentine.

Abietites, (a-bī-et-ī'tez). [L. *abies*, fir tree] Fossil remains of fir trees, chiefly cones, found in Wealden and Greensand.

Abiogenesis, (a-bi-ō-jen'e-sis). [Gk. *a*, not; *bios*, life, *genesis*, birth] Spontaneous generation.

Abiotos, (a-bī'o-tos). [Gk. *a*, not, *biotos*, life.] =Hemlock: so named from its poisonous qualities.

Ablepsia, (ab-lep'si-a). [Gk. *a*, not; *blepo*, I see]=blindness.

Abnormal, (ab-nor'mal). [L *ab*, from; *norma*, rule.] Not in accordance with the type of growth: used of animals and plants which differ from the ordinary plan.

Aboma, (ab'ō-ma). [The native name]=Epicrates cenchria: a large yellow snake of S. America.

Abomasum, (ab-ō-mā'sum). [L. *ab*, from; *omasum*, tripe]=Rennet: the fourth cavity in the complex stomach of a ruminant animal.

Abranchiate, (a-brang'ki-āt). [Gk. *a*, not, and *branchia*, gills.] Without gills, unable to breathe only in water. *A. vertebrata*, mammalia, aves, and reptiles, the highest forms of animal life, all of which have an amnion, an allantois, but no gills. *A. annelida*, leeches and earthworms.

Abrazite, (ab'ra-zīt) [Gk. *a*, not; *brazo*, I bubble.] A mineral, chiefly silicate of alumina, lime, and potash, one of the zeolite group, which does not effervesce under the action of the blowpipe.

Abreuvoir, (ab-rūv-war'). [The French name.] The space between stones in masonry, usually filled with mortar.

Abscissa, (ab-sis'a). [L. *ab*, from; *scindere*, to cut off]. The portion of a given curve cut off by another line.

a a

a Abscissa.

Absinthine, (ab-sinth'in). [L. *absinthium*, wormwood.] = $C_{16}H_{22}O_5$. A bitter crystalline principle found in wormwood.

Absolute Unit of Force. That force which will generate a unit of velocity when acting on a unit of mass during a unit of time. The unit of time is usually 1 second, of velocity 1 foot (in Britain), and of weight 1 lb. avoirdupoise (in Britain).

Absorption, (ab-sorp'shon). [L *ab*, from ; *sorbeo*, I suck up]. 1. The stoppage of heat or light rays, which varies inversely as the reflecting power of the absorbing surface. 2. Passage of a liquid or gas into or through a porous substance.

Abutilon (a-bū'ti-lon). [Gk. *abutilon*, mulberry tree.] A plant of the mallow kind.
Acacia, (a-kā'shi-a). [Gk. *akakia*, a thorn.] A tree or shrub, usually thorny, and yielding a gum. *False A.*=locust tree.
Acalephæ, (a-ka-lē'fē). [Gk. *akalephe*, a nettle.] Jelly fishes, sea nettles, medusæ, &c.; gelatinous, marine, stinging zoophytes, having a central mouth, no senses but that of touch, feeding on small fish, &c.; varying in size from very small to several feet in diameter. Belong to Hydrozoa, *q.v.*
Acanthaceæ, (a-kan-thā'she-ē). [Acanthus, *q v.*] Monopetalous herbs, shrubs, and weeds, chiefly tropical, resembling the Acanthus.
Acanthocephala, (a-kan-tho-se'fa-la). [Gk. *akantha*, thorn; *kephale*, head.] Vermiform internal parasites having a spiny proboscis, but no mouth, resembling threadworms: also called helminthes and echinorhynchi. Belong to Scolecida.
Acanthodei, (a-kan-thō'de-ī). [Gk. *akantha*, thorn.] Fossil fish, having thorn-like fins.
Acanthometrina, (a-kan-tho-met'ri-na) [Gk. *akantha*, thorn; *metra*, medium.] Minute animals, balls of jelly upon a framework of spicules, belonging to Protozoa; found in Mediterranean Sea; intermediate between Polycistina and Sponges.
Acanthophis, (ak-an'tho-fis). [Gk. *akantha*, thorn; *ophis*, serpent.] A small venomous serpent with sharp pointed tail.
Acanthopteri, (a-kan-thop'te-ri). [Gk. *akantha*, thorn; *pterygion*, fin.] Fish having spiny dorsal fins, as perch, mackerel, &c.
Acanthospongia, (a-kan-tho-spun'jia). [Gk. *akantha*, thorn; *spongia*, sponge.] A fossil sponge, found in Silurian strata.
Acanthoteuthis, (a-kan-tho-tūth'is). [Gk. *akantha*, spine; *teuthis*, a fish.] A cuttle-fish with spiny tentacles, of which fossil bones, spines, &c., are found in Oolitic strata.
Acanthurus, (a-kan-thū'rus). [Gk. *akantha*, spine; *oura*, tail.] An herbivorous fish, found only in tropical seas, with short thick body, and sharp spines at the tail.
Acari, (ak'ar-i). Plural of acarus, *q.v.*
Acarina, (ak-ar-ī'na). [Acarus, *q v.*]=Acari, *q.v.*: one of Hœven's sub-divisions of the Arachnida.
Acarus, (ak'ar-us). [Gk. *acari*, mite.] Mite: a minute spider-like animal, sometimes parasitic, belonging to Arachnida.
Accipitres, (ak-si'pi-trēz). [L. *accipiter*, hawk.] Birds of prey; strong carnivorous birds, such as the eagle, hawk, &c.
Acenaphthene, (a-sen-af'thēn). [Naphtha, *q.v.*] A hydrocarbon, found in coal tar, $C_{12}H_{10}$.
Acephala, (a-se'fa-la). [Gk. *a*, not; *kephale*, head.] Molluscs, such as the oyster, that have no head: mostly marine.
Acephalocysts, (a-se-fal'o-sistz). [Gk. *a*, not; *kephale*, head; *kystis*, bladder.] Headless hydatids; simple sacs filled with fluid, varying greatly in size, found in bodies of animals; cysts, or larval forms, of cestoid entozoa.
Acephalophora, (a-se-fa-lo'fo-ra). [Gk. *a*, not; *kephale*, head; *pherein*, to bear.] A primary division of mollusca, including all those having no distinct head.
Acer, (ā'ser). [L *acer*, maple.] Maple: a common tree, with fine-grained timber; leaves and seed-vessels of A., found fossil.
Aceraceæ, (a-se-rā'se-ē). [Acer, *q.v.*] Trees, common in Europe, Asia, and N. America, with fine-grained timber, and bark useful for red and yellow dyes. Belong to Sapindales.
Aceras, (a'ser-as). [Gk. *a*, not; *keras*, horn.] Man orchis; a plant, the flowers of which have a grotesque resemblance to the human form.
Acetabula, (a-set-ab'u-la). [L. *acetabulum*, goblet or socket.] 1. The sockets in which the hip bones fit, in vertebrate animals. 2. Suckers on the tentacles of Cephalopoda.
Acetabularidæ (a-set-ab-ū-lar'i-dē). [Acetabulum, *q.v.*] Marine plants of simple organization.
Acetabulum, (as-ē-tab'ū-lum). [L. *acetabulum*, vinegar bowl.] The socket of the hip joint.
Acetal, (a-sē'tal). [Acetic acid, *q.v.*] $C_6H_{14}O_2$: a colourless liquid, compound of aldehyd and ether, which becomes acetic acid by the addition of oxygen.
Acetamide, (a-sēt'am-īd). [Acetic acid, *q.v.*] C_2H_5NO: a deliquescent white crystalline substance, having the properties of both base and acid, one of the monamides.
Acetanilide, (a-sēt-an'i-līd) [Acetyl and aniline, *q v.*] C_8H_9NO=Aniline, in which one atom of hydrogen is replaced by acetyl.
Acetates, (as'-e-tāts). [Acetic acid, *q.v.*] Compounds of acetic acid with bases.
Acetene, (as'e-tēn). [Acetic acid, *q.v.*] Ethen=Olefiant gas=Ethylene, *q.v.* A combustible gas.
Acetic acid, (a-set'ik as'id). [L. *acetum*, vinegar.] $C_2H_4O_2$: a monobasic acid, found in many plants, also obtained from alcohol, wood, &c; the base of vinegar. Also called methyloxalic acid, methylformic acid.
Acetic aldehyde, (a-set'ik al'dē-hīd)=C_2H_4O=Aldehyde, *q.v.* A pungent, volatile, inflammable liquid.
Acetic anhydride, (a-set'ik an-hī'drīd). $C_4H_6O_3$. A colourless, pungent, highly refracting liquid.
Acetic ether, (a-set'ik ē'ther). $C_4H_8O_2$=Ethyl acetate: an odorous acrid liquid.
Acetic ethers, (a-set'ik ē'therz). Compounds of acetic acid and alcoholic radicals.
Acetic series of acids, (a-set'ik)=Stearic series, having the formula $C_nH_{2n}O_2$, and including acetic, stearic, formic, and butyric acids.
Acetimeter, (a-se-tim'et-er). [Acetic and meter, *q.v.*] An instrument for measuring the strength of acetic acids.
Acetone, (as'ē-tōn). [Acetic acid, *q.v.*] C_3H_6O: a clear odorous inflammable liquid obtained from gum, sugar, and all acetates.
Acetones, (as'ē-tōnz). Ketones: aldehyds in which an atom of hydrogen is replaced by an equivalent of an organic radical.
Acetonia, (as-ē-to'ni-a). [Acetone, *q.v.*] Acetonine, *q.v.*
Acetonic acid, (as-ē-ton'ik as'id). $C_4H_8O_3$: a compound crystallised monobasic acid, formed by the union of acetone and formic acid.

Acetonine, (a-sĕt′ō-nīn). [Acetone, *q.v.*] Acetonia=$C_9H_{18}N_2$: a colourless liquid alkaline base; obtained by action of ammonia on acetone.
Acetonitrile, (a-sē-tō-nī′trīl). [Acetic and nitrogen, *q v.*] C_2H_3N: a fragrant liquid obtained from ammonic acetate.
Acetureide, (a-sĕt′ū-rīd). [Acetyl and urea, *q.v.*] $C_3H_6N_2O_2$=urea in which one atom of hydrogen is replaced by acetyl.
Acetyl, (as′ē-til). [Acetic acid, *q.v.*] C_2H_3O: the radicle of acetic acid.
Acetylene, (a-sĕt′i-lēn). [Acetyl, *q.v.*] C_2H_2= Klumene=Ethine: an inflammable gas obtained from marsh-gas, coal-gas, &c.; the type of the acetylene series of hydrocarbons.
Acetylene series (a-sĕt′i-lēn sē′ri-ēz) of hydrocarbons, having the form C_nH_{2n-2}, of which acetylene is the type.
Acetylia, (a-sē-tī′le-a). [Acetyl, *q.v.*] $C_4H_{10}N_2$ = Diethylenia = Diethylene diamine: an odorous inflammable oily liquid.
Achene, (a′kēn). [Gk. *a*, not; *chaino*, I open]=achenium: a small one-seeded fruit, indehiscent.
Achernar, (a-kęr′nar)=*α* Eridani: the chief star of the constellation Eridanus, of the first magnitude, and one of the brightest in the S. heavens.
Achillea, (a-kil′le′a). [Achilles, the Greek warrior.] An herb, with yellow flower, of which the yarrow and sneezewort are varieties.
Achilleic acid, (a-kil′ik as′id), an acid found in the plant Millefoil or Achillea Millefolium.
Achlamydeæ, (ak-la-mid′e-ē). [Gk. *a*, not; *chlamys*, cloak.] Plants, of which the flowers have neither calyx nor corolla; form a sub-division of Apetalæ.
Achlya, (a-klī′a). Common fly fungus: a minute aquatic fungus, parasitic on fish and dead flies, &c., a genus of Confervaceæ.
Achorion, (a-kō′ri-on). [Gk. *chorion*, external skin.] A microscopic plant, found in the human skin during the disease of *favus*.
Achromatism, (ak-rōm′a-tizm), refraction of light without dispersion: correction of chromatic aberration, so that images formed by lenses have no fringe of colour, also used for correction of spherical aberration.
Achromatopsy, (a-krōm-a-top′si). [Gk. *a*, not; *chroma*, colour; *opsis*, sight] = Daltonism=colour-disease: an ocular affection which causes different colours to be more or less confounded.
Acids, (as′idz). [L. *acidus*, sharp.] Salts of hydrogen: chemical compounds, of which hydrogen is an essential constituent, differing widely in composition and origin, usually soluble in water, of sour taste, electro negative, and turning vegetable blue colour into red; any of which readily form compounds with other bodies. Hydrogenated bodies, of which the hydrogen can readily be replaced by a metal. Monobasic organic acids have one atom of oxygen in the radicle; dibasic organic acids two such atoms.
Acid-making metals, which form acid compounds: antimony, arsenicum, bismuth, molybdenum, niobium, tantalum, thorium, tin, titanium, tungsten, vanadium, zirconium.
Acid series, (as′id sē′ri-ez). Acetic series= $C_nH_{2n}O_2$, oleic series=$C_nH_{2n-2}O_2$; lactic series=$C_nH_{2n}O_3$: glyceric series=$C_nH_{2n}O_4$: benzoic series=$C_nH_{2n-8}O_2$; oxalic series = $C_nH_{2n-2}O_4$, glycollic series=$C_nH_{2n}O_3$.
Aclinic line, (a-klin′ik). [Gk. *a*, not; *klinein*, to incline.] Magnetic equator: an approximation to a great circle of the earth, equidistant from the two magnetic poles, at any point of which the dipping needle remains horizontal.
Aconite, (ak′ō-nīt)=Aconitum, *q.v.*
Aconitic acid, (a-kon-ī′tik as′id). [Aconitum, *q.v.*] $C_6H_6O_6$: an acid found in aconitum and equisetum; also obtained from citric acid.
Aconitine, (a-kon′i-tīn). [Aconitum, *q.v.*]= Aconitin=$C_{30}H_{47}NO_7$: a crystalline poisonous alkaloid substance obtained from monkshood.
Aconitum, (a-kon-ī′tum). [Gk. *akoniton*, from; *akon*, a small spear.] Monkshood = wolf's bane: a common hardy very poisonous herb, with pointed leaves, belonging to Ranunculaceæ
Aconityl, (ak-o-nī′tīl). [Aconite, *q.v.*] $C_6H_3O_3$: the radicle of aconitic acid.
Acontia (a-kon′ti-a). [Gk. *akon*, a small spear.] Bunches of white cord, full of lasso-cells, found in Actiniæ, by means of which they kill their prey.
Acontias, (a-kon′ti-as). [The Greek name.] A small serpent, having no poison fangs, and feeding on insects, connecting snakes and serpents by resembling each.
Acorn shells, (ā′korn shelz). [Name from the shape.] Small crustaceous animals found on shores below high-water mark=Balanidæ.
Acorus, (a′ko-rus). [Gk. *akoron*.] Sweet flag =Sweet sedge: a poisonous herb belonging to Orontiaceæ.
Acotyledons, (a-kot-il-ē′donz). [Gk. *a*, without; *kotyledon*, seed-lobe] Cryptogamia= Cellulares. Plants having neither seed-leaves nor flowers, almost wholly of cellular tissue, reproduced by spores; divided into Vasculares and Cellulares.
Acoustics, (a-kous′tiks). [Gk. *akoustos*, audible.] The science of sound, including the vibrations of elastic bodies which give sounds.
Acraldehyd, (a-kral′de-hīd). [Acer and aldehyd, *q.v.*] $C_4H_8O_2$: a form of aldehyd, a liquid obtained from glycol.
Acraspedote medusæ, (a-kras′pe-dōt me-dū′sē). [Gk. *a*, not; *kraspedo*, to border.] Steganophthalmous medusæ; medusæ having no velum or border to the swimming bell.
Acridine, (ak′ri-dīn). [L. *acer*, sharp.] $C_{12}H_9N$: a crystalline base obtained from anthracene, which causes sneezing and coughing when inhaled in dust or vapour.
Acrita, (ak′ri-ta). [Gk. *akritos*, indistinct.] Protozoa, &c.: animals of a low and indistinct organization.
Acrobates, (ak-rō′ba-tez). [Gk. *akros*, point; *bao*, I walk.] Insectivorous marsupial animals, walking on the tips of the toes.
Acrochordus, (ak-rō-kor′dus). Gk. *akros*, end; *chorde*, string.] Harmless serpents.

Acrodonta, (ak-rō-dont'a). [Acrodont teeth, *q.v.*] Iguanas, of the old world, having teeth fixed on the ridge of the jaw.

Acrodont teeth, (ak'ro-dont). [Gk. *akros*, high; *odous*, tooth.] Teeth fixed on the upper ridge of the jaw, and not in cavities, as in some lizards.

Acrodus, (ak'ro-dus). A placoid fish, known only by fossil teeth, found in lias rocks.

Acrogeneæ, (ak-rō-jen'e-ē). [Acrogens, *q.v.*] Acrogens.

Acrogens, (ak'ro-jenz). [Gk. *akros*, high; *gennao*, I produce.] Mosses, ferns, &c.; plants of cellular tissue, growing in length only, having no flowers or seed-leaves. Also used as equivalent to acotyledons.

Acrognathus, (ak-rōg-nath'us). [Gk. *akros*, high; *gnathos*, jaw-bone.] A fish of the salmon kind, known only by fossil remains found in chalk rocks.

Acrolein, (ak-rō'lin). [L. *acer*, sharp; Oleic, *q.v.*] Acrylic aldehyd=C_3H_4O: a colourless inflammable neutral liquid obtained from glycerin, acetic bromide, &c.

Acromion, (ak-rō'mi-on). [Gk. *akros*, summit; *omos*, shoulder.] A projecting portion of the scapula in man.

Acronical, (a-kron'ik-al). [Gk. *akros*, point; *nux*, night.] Rising or setting at the time of sunset.

Acrosaurus, (ak-rō-saw'rus). [Gk. *akros*, point; *sauros*, lizard.] A fossil reptile, having its teeth on the edge of the jaw.

Acrylates, (ak-ri'lāts). [Acrylic acid, *q.v.*] Compounds of bases with acrylic acid.

Acrylic acid, (a-kril'ik as'id). [Acrolein, *q.v.*] $C_3H_4O_2$, acroleic acid obtained by oxidation of acrolein, an odorous and acrid liquid, one of the oleic series.

Actæa, (ak-tē'a). [Gk. *akte*, elder.] Baneberry=Herb Christopher: a poisonous herb, common in cold climates, belonging to Ranunculaceæ.

Actiniæ, (ak-tin'i-ē). [Gk. *aktis*, a ray.] Sea-anemones, &c., a group of marine animals, belonging to Zoantharia, from ½ in. to 14 in. diameter, usually between ½ in. and 3 in., attached to stones, shells, and rocks: can move, but very slowly. Sometimes found on the back of a crab; some have eyes, with crystalline lenses and optic nerves; also a generally diffused sense of touch.

Actinic rays, (ak-tin'ik rāz). [Gk. *aktis*, ray (of sunlight).] Rays beyond the violet end of a spectrum, usually invisible, but having strong chemical action=Ritteric rays=Phosphorogenic rays.

Actinism, (ak'tin-izm). [Gk. *aktis*, ray.] The power of sunlight to cause chemical action, as in photography.

Actinocarpus, (ak-tin-ō-kär'pus). [Gk. *aktis*, ray; *karpos*, fruit.] Star fruit: a group of aquatic plants belonging to Alismaceæ.

Actinocrinites, (ak-tin-ok'ri-nits). [Gk. *aktis*, ray; *krinon*, lily.] A group of encrinites having projecting spines, found in Carboniferous and Silurian strata.

Actinoids, (ak'tin-oidz). [Actiniæ, *q.v.*] Actiniæ, and other animals of the same kind, as metridium, &c., some are coral making.

Actinolite, (ak-tin'o-lit). [Gk. *aktis*, ray; *lithos*, stone.] A mineral of the amphibole group.

Actinolite-schist, (ak-tin'o-lit-shist). [Actinolite, *q.v.*] A slaty rock, chiefly composed of actinolite, in thorn-like or radiating crystals.

Actinophrys, (ak-tin'o-fris). [Gk. *aktis*, ray; *ophrys*, eyebrow.] Protozoa, with radiating cilia, any part of the surface of which is capable of forming a temporary stomach.

Actinosoma, (ak-tin-o-sō'ma). [Gk. *aktis*, ray; *soma*, body.] The entire body of an actinozoon, whether single or compound.

Actinozoa, (ak-tin-o-zō'a). [Gk. *aktis*, ray; *zoon*, animal.] Zoophyta=Anthozoa=Coral-polypes, Sea-anemonæ, &c.; forming a subdivision of Cœlenterata, and including Ctenophora and Coralligena; their structure resembles that of Hydrozoa, but is somewhat more highly organised.

Actinozoön, (ak-tin-o-zō'on). [Same as Actinozoa, *q.v.*] An individual of the Actinozoa.

Acyclic, (a-si'klik). [Gk. *a*, without; *kyklos*, circle.] Without cycles.

Adamantine lustre, (ad-a-mant'in lus'ter). [Gk. *adamas*, a hard stone.] Found in substances, like the diamond, having a high refractive power.

Adam's apple, (ad'amz ap'pl). [Name derived from the Fall of Adam and Eve.] A projection in the front of the neck, being the apex of the V-shaped thyroid cartilage.

Adam's needle, (ad'amz nēd'l). A plant of New Mexico=Yucca gloriosa.

Adansonia, (ad-an-sō'ni-a). [Adanson, a naturalist.] Baobab tree=Calabash: a very large African tree, sometimes 30 ft. in diameter, belonging to Bombaceæ.

Adder, (ad'er). [A.-S. *ætter*, adder.] Viper; a poisonous serpent.

Adder's tongue, (ad'erz tung). [From shape of fronds]=Ophioglossum: a common fern.


Adder.

Adelarthrosomata, (a-del-är-thrō-sō'ma-ta). [Gk. *adelos*, hidden; *arthron*, joint; *soma*, body.] Harvest-spiders, Book-scorpions, &c.: a division of Arachnida, in which the abdomen and thorax are not usually clearly divided.

Adeniform, (ad-en'i-form). [Gk. *aden*, gland.] Gland-shaped.

Adenology, (ad-en-ol'o-ji). [Gk. *aden*, gland.] The knowledge of the nature and purpose of glands.

Adfected, (ad-fek'ted). [L. *ad*, to; *factus*, made.] An adfected equation is one having the unknown quantity in different powers, as x^2 and x, x^4 and x^3, &c.

Adhesion, (ad-hē'zhun). [L. *ad*, to; *hæro*, I stick.] The form of molecular attraction which exists between any solid body, and any other body, solid, liquid, or gaseous.

Adiantites, (adi-an-ti'tez). [Adiantum, *q.v.*] Fossil remains of ferns, resembling adiantum.

Adiantum, (ad-i-ant'um). [Gk. *adianton*, unwetted.] = Maiden-hair: a fern found in

damp places, the leaves of which are finely divided, and not easily wetted, belonging to Polypodiaceæ.

Adipic acid, (ad'i-pik). [Lat. *adeps*, fat]= $C_6H_{10}O_4$: a fatty acid formed during the action of nitric acid on oleic acid.

Adipocere, (ad-i-pō-sēr'). [Lat. *adeps*, fat; *cera*, wax: F. *adipocire*.] A fatty residue from the decay of animal matter in damp places=Grave-wax: chiefly composed of margarin and ammonia.

Adit-level, an entrance cut, to drain the water from a mine, through a hill side.

Adjutant, (ad'joo-tant). [Adjutant, from its imposing appearance.] = Ciconia argala: a large Indian species of crane.

Adnate, (ad nāt'). [L. *ad*, to; *natus*, grown.] Grown to another body, as a climbing parasite to a tree.

Adonis, (a-dō'nis). [Adonis, god of beauty.] An herb resembling the buttercup, the flower of which is often very pretty, belonging to Ranunculaceæ.

Adoxa, (a-doks'a). [Gk. *a*, not; *doxa*, glory]= Moschatel=Musk-crowfoot: an odorous herb with green flowers, belonging to Araliaceæ

Advice-boat. A small vessel, built for quick sailing.

Æchmodus, (ēk'mo-dus). [Gk. *aichme*, point; *odous*, tooth.] A ganoid fish, with sharp-pointed teeth, fossil remains of which are found in lias rocks.

Ægiceraceæ, (e-jis-ẹr-ā'se-ē). [Gk. *aix*, goat; *keras*, horn.] A small group of tropical shore plants, resembling Ardisiads, named from the typical genus Ægiceras, the pods of which are horn-shaped.

Ægopodium, (ē-go-pō'di-um). [Gr. *aix*, goat; *podion*, foot.]=Goat weed=Bishop's weed= ash weed: a common herb with white flowers, belonging to Apiaceæ.

Æpiornis, (ē-pi-or'nis). [Gk. *aipys*, high; *ornis*, bird.] A very large bird belonging to Cursores, found at Madagascar, but now probably extinct.

Æquoreal pipe fish, (ē-qwō're-al pīp fish). [L. *æquoreus*, belonging to the sea]=Syngnathus æquoreus: a fish with long slender body.

Aerolites, (ā'ẹr-ō-līts). [Gk. *aer*, air, *lithos*, stone.] = stone meteorites: pieces of stone (sometimes very large) falling to the earth; probably fragments of some planet, sometimes called planetary dust.

Aerosiderites, (ā-ẹr-ō-sid'ẹr-īts). [Gk. *aer*, air; *sideros*, iron]=Iron meteorites.

Aerosiderolites, (ā-ẹr-ō-sid'ẹr-ō-lits). [Gk. *aer*, air; *sideros*, iron; *lithos*, stone.] Meteors containing both stone and iron.

Æsculaceæ, (ēs-kū-lā'se-ē). [Aesculus, *q.v.*]= Sapindaceæ, *q.v.*

Aesculin, (ēs' kū-lin). [Æsculus, *q.v.*] = $C_{21}H_{24}O_{13}$: an alkaline substance, obtained from the horse-chestnut.

Æsculus, (ēs'kū-lus). [L. *æsculus*, an oak tree.] = Horse-chestnut, a large handsome tree; root, fruit, and leaves poisonous. *A. Hippocastanum* = horse-chestnut. *A. Ohiotensis*=buck-eye=American horse-chestnut.

Æstivation, (ēs-tiv-ā'shun). [L. *æstiva*, summer time.] 1. The method of arrangement of the parts of a flower bud, which comes in summer. 2. The dormant state of some animals during the hot season.

Æthalium, (e-thā'li-um). A fungus, belonging to Gasteromycetes. *A. Septicum* lives on decaying vegetable matter; considered to be an animal from its power of moving and absorbing solid food.

Æther, (ē'thẹr). [L. *æther*, pure air.] The (hypothetical) invisible and imponderable medium whose undulations are the cause of light, supposed to fill all space, including the interstices of all bodies.

Æthrioscope, (ē-thrī'os-kōp). [Gk. *aithrios*, airy; *skopeo*, I see.] An instrument invented by Leslie to determine the variations of heat radiation.

Æthusa, (ē-thū'sa). [Gk. *aitho*, I burn.]= Fool's parsley: a poisonous herb resembling parsley, belonging to Apiaceæ.

Affinity, (af-fin'i-ti). [L. *ad*, to; *finis*, boundary] The form of atomic attraction which acts between unlike bodies, as between oxygen and potassium, hydrogen and chlorine, &c , causing chemical action.

Afghans, (af'ghanz). An Asiatic race.

African jumping shrews=Macroscelides, *q v.*

After-damp, (aft'ẹr-damp). [After, *q.v* ; G. *dampf*, vapour.]=Choke-damp, the mixture of carbonic anhydride and nitrogen resulting from an explosion of fire-damp.

Agallochum, (a-gal'ō-kum)=Aloes wood=1. Aloexylon agallochum: a tree belonging to Leguminosæ. 2. Aquilaria secundaria: a tree belonging to Aquilariaceæ.

Agalmatolite, (a-gal-mat'ō-lit) [Gk. *agalma*, image, and *lithos*, stone.] Chinese stones= pinites, pyrophyllites, &c., altered by heat from clay slate; used for grotesque statuary; chiefly silicate of alumina.

Agama, (ā'gam-a). A reptile resembling the lizard, found in Asia, Africa, S. America, and Australia.

Agami, (ā'ga-mi)=Trophia crepitans: a bird also called Golden Trumpeter, with long neck and legs.

Agamic, (a'g-a-mik). [Gk. *a*, without; *gamos*, marriage]=Asexual: not having visible organs of reproduction, as flowerless plants, &c.

Agamogenesis, (ag-a-mō-jen'e-sis). [Gk. *a*, not; *gamos*, marriage , *genesis*, birth] Asexual reproduction: procreation without previous union of the two sexes.

Agardh's classification of Plants, (a-gärd'). Acotyledons, pseudocotyledons, cryptocotyledons, phanerocotyledons.

Agaricaceæ, (a-gar-ik-ā'se-ē). [Agaricus, *q v.*] = Hymenomycetes (Fungales): plants resembling the Agaricus.

Agaricia, (a-ga-ri'si-a). [Agaricus, *q.v.*]=Mushroom madrepore: a coral resembling the mushroom in appearance.

Agaricus, (a-gar'ik-us). [Gk. *agarikon.*] Flowerless plants, consisting of a fleshy body, with stem, mostly poisonous, belonging to Hymenomycetes. *A. Campestris*= common mushroom.

Agate, (ag'āt). [Achates, the Greek name.]

A mineral composed of chalcedony, jasper, &c., having many shades of colour: consists chiefly of silica.

Agave, (a-gā've). [Gk. *agauos*, noble.] Aloe: a plant with a very short stem, large leathery leaves, and, after 70 or 100 years, a very long flower stem, surmounted by a great number of green flowers, which bloom only once, belonging to Amaryllidaceæ.

Agglomerate, (ag-glom'ẹr-āt). [L. *ad*, to; *glomerare*, to roll.] Rocks formed of angular fragments of other rocks. See Conglomerate.

Aggregata, (ag-gre-gā'ta). [L. *ad*, together; *grego*, I gather.] A family of molluscs = Acephala nuda.

Aggregatæ, (ag-gre-ga'tē). [Same as Aggregata, *q.v.*]=Sea lavender, &c.: flowers being aggregates of smaller flowers.

Agila wood=Aloes wood=Eagle wood: the inner wood of the trunk of Aquilaria ovata, a tree of Malacca.

Agonic line, (a-gon'ik līn). [Gk. *a*, not, *gonia*, angle.] On which the geographical and magnetic meridians coincide.

Agouti, (a-goo'ti) = Long-nosed Cavy=Dasyprocta aguti. A gnawing herbivorous animal resembling the hare, found in tropical America.

Agrimony, (ag'ri-mo-ni). [The Latin name.] = Agrimonia: an herb with small yellow flowers, belonging to Rosaceæ. *Hemp agrimony*=Eupatorium, *q v.*

Agrippa, (a-grip'pa). [Classical.] A crater in the moon, *q v.*

Agrostis, (a-gros'tis). [The Greek name.]= Bent. A creeping grass of quick growth, useful for pasture.

Ai, (a'e). [From the sound it makes.]=Sloth =Bradypus tridactylus. An arboreal apelike quadruped of S. America.

Aich metal, (āch met'al). An alloy of copper and zinc, with a small proportion of iron.

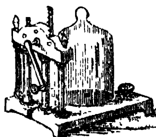
Ainos. An Asiatic race.

Air, (ār). [L. *aer*, atmosphere.] The gaseous mixture of oxygen and nitrogen that surrounds the earth to a distance of 40 miles or more.

Air-bladder, (ār-bla'der) = Swim-bladder: in fishes, to enable them to rise or sink in water.

Air-cells, (ār' selz). [L. *aer*, air; *cella*, a little room.] 1. Small cavities, containing air, terminating the bronchial tubes. 2. Small cavities in the stem and leaves of plants.

Air-pump, (ār' pump). A machine for removing air out of any given vessel, or forcing it in.


Air-pump.

Air-reduction process= Desulphurization by the action of air in lead refining.

Air-sacs, (ār' saks). [L. *aer*, air; A.-S., *sacc*, bag.] Air vessels in birds, forming the termination of the bronchial tubes.

Air thermometer, (ār thẹr-mom'et-ẹr). [Gk. *aèr*, air; *thermos*, heat; *metron*, measure.] An instrument in which the rise or fall of temperature is shown by the expansion or contraction of air.

Aisle, (īl). [The French word.]=Wing, or side portion, of a building.

Aix-la-Chapelle beds, (ā-la-sha-pel' bedz). [Near the town of A.] Thick white sands and laminated clays, in which are found remains of land plants, belonging to the Upper Cretacean strata.

Ajuga, (a'ju-ga). [Corruption of Abija.]= Bugle: an herb, with blue or yellow flowers, belonging to Lamiaceæ.

Ajutage, (aj'oo-tāj). [F. *ajoutage*, piece added.] =A short efflux tube used to increase the flow of a liquid from any vessel.

Aka. An Indian tribe living among the hills of Assam.

Akassa. An African race.

Akee-tree=Blighia sapida: a tree with edible fruit, found in Guinea, S. America, and W. Indies, belonging to Sapindaceæ.

Aki=Lignum vitæ of New Zealand=Metrosideros buxifolia, a shrub, climbing round trees, with very hard wood, belonging to Myrtales.

Ala (of sphenoid) (ā'la). [L. *ala*, wing.] A projection of the sphenoid bone.

Alabaster, (al'a-bas-tẹr). [Gk. *alabastron*, a smooth white stone.] A compact granular variety of sulphate of lime, softer than marble, usually white, used for small statuary.

Alangiaceæ, (a-lan-ji-ā'ce-ē). [Alangium, *q.v.*] =Alangiads: trees and shrubs, chiefly Indian, forming a sub-division of Myrtales.

Alangium, (a-lan'ji-um). [The Malabar name.] An Indian tree, with showy flowers.

Alanin (a'la-nin) = $C_3H_7NO_2$ = Amidopropionic acid = Lactamic acid = Amidolactic acid: a neutral crystalline base obtained from ammonic aldehyd by action of hydrochloric and hydrocyanic acids.

Alate, (a'lāt). [L. *ala*, wing.] Winged.

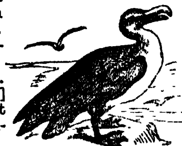
Alauda, (a-lau'da) [L. *laus*, praise.]=Lark: a small migratory singing bird belonging to Passeres.

Albacore (al'ba-cōre) = Thynnus albacora = Scomber glaucus: a fish.

Albata, (al-bā'ta). [L. *albus*, white]. A white alloy.

Albategnius, (al-ba-teg'ni-us). A plain in the moon, *q.v.*

Albatross, (al'ba-tros). [Sp. *alcatraz*, pelican.] A large carnivorous sea-bird, common in temperate regions. *Common A.* = Diomedea exulans.


Albatross.

Albedo, (al'be-do). [L. *albeo*, to be white.] The power of a planet to reflect light falling on its surface.

Albertite, (al'bẹr-tīt)= Pure jet=pure pitch coal: found in the Albert mine, Acadia, and in Scotland.

Albinos, (al-bē'nos). [The Spanish name.] 1. =Leucæthiopes=white negroes: natives of the coast of Africa, Java, and Ceylon, with white skin, white hair, and pink eyes. 2.

The New Zealand white kangaroo. 3. Used generally in every race for white varieties.
Albireo, (al-bī'rē-ō))=β Cygni: a star in the constellation Cygnus.
Albite, (al'bīt). [L. *albus*, white.]=Sodium felspar, a white variety of felspar, containing sodium.
Albukalin, (al-bū'ka-lin). [*Albu*min and al*kalin*]=$C_4H_8NO_3\ \frac{1}{2}H_2O$: a friable brown albuminous substance, obtained by the action of an alkali on albumin: found in leukhæmic blood.
Albumin, (al-bū'min). [L. *albus*, white.]= Albumen. 1. A colourless, viscous liquid which solidifies when heated, and may be evaporated into a yellow transparent solid, such as in the white of egg (=ovalbumin), and in the serum of blood (=seralbumin). Varieties of A. are synaptase, diastase, pepsin, &c. 2. A compound of C. and N. found in plants and animals, especially in seeds of plants, in which, when acted on by oxygen and water, it changes to a milky and sugary fluid, upon which the young plant is nourished.
Albuminoid principles, (al-bū'mi-noid.) [Albumin, *q.v*; Gk *eidos*, form.] Albumin, fibrin, casein, legumin, globulin, vitellin, &c, all azotised substances resembling albumin.
Albuminosæ. Term used by Brongniart for monocotyledonous plants.
Alburnum, (al-bur'num). [L. *albus*, white]= Sapwood: light coloured new wood, next the bark, through which the sap rises.
Alca, (al'ka)=Auk: a sea bird, with wide beak, and short webbed feet, placed far back, found in cold climates, feeds on fish; belongs to Natatores.
Alcarazas, (al-kar-ats'as). [Sp. *alcarraza*, unglazed pitcher.] Porous earthen vessels used in hot countries to keep water cool by evaporation.
Alcargin, (al-kar'jin) = $C_4H_6AsO_3$ = KdO_3= Cacodylic acid, *q.v.*
Alcedo, (al-sē'do) = King-fisher: a perching bird, belonging to Halcyonidæ.
Alces, (al'sēs)=Elk: moose, &c. Large animals of the deer kind, with large horns.
Alcestis, (al-sest'is). [The Greek name] A minor planet, discovered August 1872
Alchemilla, (al-ke-mil'a). [Gk. *alchemy*, from being used in it]=Lady's mantle=Parsley piert, an herb with very small flower, chiefly American, belonging to Sanguisorbaceæ.
Alchemy, (al'ke-mi). [Ar. *al*, the; Gk. *chemeia*, chemistry.] The earliest form of chemistry: the art by which it was believed, in the middle ages, that other metals might be changed into gold, and the elixir of life be discovered.
Alchiba, (al'ki-ba). [The Arabic name.]= Algorab, *q.v.*
Alcohol, (al'ko-hol). [Ar. *alkohol*, the finely divided substance.]=Spirit of wine=C_2H_6O =Hydrated ethyl=$(C_2H_5)HO$:=Vinic A.= Ethyl A.: a colourless inflammable liquid, volatile and stimulating, much used as a solvent, and forming the base of all fermented liquors.
Alcohols, (al'ko-holz). 1. A series of compounds=$C_nH_{2n+2}O$, resembling alcohol in character=water in which one atom of H is replaced by an organic radicle = hydrated oxides of organic radicles. 2. Neutral compounds of C, H, and O, from which water and ether are formed by the action of acids. Diatomic A.=Glycols; Triatomic A. = Glycerins; Primary A.=Monomethyl A., &c.; Secondary A.=Dimethyl A., &c.; Tertiary A.=Trimethyl A., &c.
Alcohol thermometer. A thermometer in which changes of temperature are shown by the rise or fall of a column of coloured alcohol, useful for very low temperatures.
Alcoholic hydrogen. The atoms of H in some acids which are not readily displaced by a base.
Alcoholometer, (al-ko-hol-om'et-ẹr). [Alcohol, *q v.*; Gk. *metron*, measure.] An instrument for determining the relative amount of pure alcohol present in any liquid.
Alcor, (al'kor). The companion star of the double star Mizar.
Alcynoe. Gelatinous sea-weeds.
Alcynoid polyps. [Alcyone, *q.v.*] Delicate coral-making polyps, often brilliantly coloured.
Alcyon, (al'sī-on). [Gk. *hals*, sea; *kuo*, I hatch]=Alcedo, *q.v.*=kingfisher, which lays its eggs in the sand by the sea-shore.
Alcyonaria, (al-sī-on-ā'rĭa). [Alcyonium, *q.v.*] =Asteroid polypes: a division of Actinozoa, of which Alcyonium is an example.
Alcyone, (al-sī'o-nī). [Classical.] η Tauri: the central star of the Pleiades, of the third magnitude, and supposed by Madler to be the central sun of our universe.
Alcyonella, (al-sī-o-nel'la). [Dim. of Alcyonium, *q.v*] A genus of fresh water polypes, which resemble plants in appearance. It has been mistaken for a plant, and also for a sponge.
Alcyonidæ, (al-sī-on'i-dē). [Alcyonium, *q v.*] A division of Alcyonaria, *q v.*: a family of asteroid polypes.
Alcyonite, (al-sī'o-nīt). [Classical.] A common chalk fossil, sometimes found as the nucleus of flint.
Alcyonium, (al-sī-on'i-um). [Alcyone, *q.v.*] A genus of Alcyonidæ, *q.v.* *A. digitatum*=Dead man's hand.
Aldebaran, (al-deb'a-ran). [Ar. *al*, the; *debaran*, leader.]=α Tauri=the bull's eye: a reddish star of the first magnitude.
Aldeby-beds. [Village of A. in Suffolk.]= Chillesford beds: belonging to New Pliocene strata, and containing marine fossils, indicative of an Arctic climate.
Aldehyds, (al'de-hīdz). [*Al*cohol *dehyd*rogenated.]=$C_nH_{2n}O$: a series of volatile liquids which readily combine with O to form acids; obtained by the removal of H from alcohols; and by addition of O to glycols: *Acetic A.* =C_2H_4O, the first known=common A. (which becomes acetic acid by addition of O_2), a pungent volatile inflammable liquid. *Aromatic A.*=Aldehyds of aromatic acids: a variety of oxidized essential oils, such as essence of bitter almonds, &c.
Aldehyd green=$C_{27}H_{27}N_3S_2O$: a green amorphous pasty substance, one of the coal-tar dyes.

Alder, (awl'der). [A.-S. *alr.*] A tree resembling the birch, the timber of which makes good charcoal, the bark is useful for tanning, and the young shoots for dyeing. *Common A.*=Alnus glutinosa. *Berry-bearing A.*= Rhamnus frangula.
Alderamin,(al'der-ām-in). [Arabic.]=α Cephei: the chief star of the constellation Cepheus.
Alecto, (a-lek'tō). [Classical: one of the Furies.] A genus of sea polypes, with a branched structure; found in deep water attached to stones, shells, &c.
Alectrænas, (al-ek-trē'nas). *A. nitidissima*= a red and grey pigeon of Mauritius, quite recently extinct.
Ale-hoof, (āl-hoof)=Ground ivy: once used in ale-making.
Alembic, (a-lem'bik). [Ar. *al*, the; Gk. *ambix*, vessel.] A vessel used in distilling, consisting of a boiler and apparatus for condensation.
Alethopteris, (a-leth-op'ter-is). [Gk. *alethes*, true; *pteris*, fern.] A genus of fossil ferns, abundant in the coal formation, and also found in Oolite and Wealden rocks: sometimes included in Pecopteris.
Aleurometer, (al-ū-rom'et-er). [Gk. *aleuron*, flour; *metron*, measure.] An instrument for measuring the quality of wheaten flour by the expansion of the contained gluten.
Alexanders, (al-ek-san'derz). [Alexandria, in Egypt] = Smyrnium olusatum: a common herb, belonging to Umbelliferæ; originally brought from Alexandria.
Alexandra, (al-ek-san'dra). One of the asteroids, *q v.*
Alexandrite, (al-ex-and'rīt). A variety of Chrysoberyl.
Alfourous. An Oceanic race.
Algæ, (al'jē). [L. *alga*, sea-weed.] = Sea-weed=rose-tangles, &c.: flowerless aquatic plants, of cellular substance, reproduced by spores, and varying much in size.
Algales, (al-gā'lēz). [Algæ, *q.v.*] = Algæ: cellular aquatic plants, reproduced by spores, including Algæ and all similar plants, as Diatomaceæ, Fucaceæ, Confervaceæ, Ceramiaceæ, and Characeæ; forming a primary division of Thallogens.
Algaroba, (al-ga-rō'ba). [Ar. *al*, the; *garoba*, bean tree.] Algaroba bean=Ceratonia siliqua, a plant called the bean tree, common in Southern Europe and Western Asia.
Algaroth (Powder of), (al'ga-roth). [V. Algoroth, its discoverer] = Oxychloride of antimony=$SbCl_3, Sb_2O_3$; used medicinally.
Algebra, (al'je-bra). [Ar. *al*, the; *gabr*, putting together.] The science of numbers: a method of general arithmetic, in which unknown numbers are expressed by letters, and by which their numerical value may be discovered.
Algebraic geometry=Analytical geometry: a method of solving geometrical problems by the use of algebraic symbols instead of by the construction of geometrical figures.
Algeiba, (al-gī'ba). [The Arabic name.]=γ Leonis: a star in the constellation Leo.
Algenib (al'jen-ib). [The Arabic name.]=γ Pegasi: a star in the constellation Pegasus.
Algodonite, (al-gō'do-nīt). [Algodes in Chili.] A mineral found in the mines of Algodes, composed chiefly of copper and arsenic.
Algol, (al'gol). [The Arabic name.]=β Persei: a variable star=head of Medusa; usually of second magnitude, but changes to fourth every third day.
Algoid, (al'goyd). [Algæ, *q.v.*; Gk. *eidos*, form.] Resembling sea-weed or algæ.
Algorab, (al'gor-ab)=Alchiba=α Corvi: the chief star in the constellation Corvus: a sun star.
Algorithm, (al'gō-rithm). [Ar. *al*, the; *gorithm*, calculation]=Notation: not often used.
Alhena, (al'he-na). [The Arabic name]=γ Geminorum: a star in the constellation Gemini.
Alidad, (al'i-dad). [Ar. *al*, the, *hidad*, rule] The cross-bar on which the verniers of a graduated scale are carried.
Aliferous, (a-lif'er-us) [L. *ala*, wing; *fero*, I carry] Provided with wings.
Alignment, (a-līn'ment). [F. *ligne*, line] Measurement by the use of straight lines.
Aliment, (al'i-ment). [L *alimentum*, food] =Food. any substance which by assimilation can be made to support life.
Alimentary canal, (al-i-men'ta-ri). [Aliment, *q v*] The long tube passing through the body, in higher animals, through which the food passes, terminated at one end by the mouth, at the other by the anus.
Alimentary system, (al-i-men'ta-ri). [Aliment, *q v.*] The organs of the body which act on the food and extract nutriment from it=the mouth, stomach, and intestines.
Alimentary tube, (al-i-men'ta-ri). [Aliment, *q.v.*]=Alimentary canal.
Alimentation, (al-i-men-tā'shun). [Aliment, *q v*]=Conversion of food into nutriment.
Alioth, (al'i-oth)=ε Ursæ Majoris: a star in the constellation Ursa Major.
Aliped, (al'i-ped). [L *ala*, wing; *pedes*, feet] Having wing-like feet: such as the bat whose fore feet are connected with the body by wing-like membranes, which serve as wings.
Alisma, L. (a-lis'ma). [The Greek name] An aquatic herb, the type of Alismaceæ. *A. plantago*=Water plantain.
Alismaceæ, (al-is-mā'se-ē). [Alisma, *q.v.*]= Alismads: Marshy aquatic plants, many with edible roots, resembling the water plantain: the type of Alismales.
Alismales (al-is-mā'lez). [Alisma, *q.v.*] A group of endogens, approximating to exogens in character, including water plantain, arrow-grasses, &c.
Alisphenoid, (al-is-fē'noid) [*Ala*, wing; *sphen*, wedge; *eidos*, form.] The greater wings of the sphenoid, which in man are large.
Alisphenoid canal, (al-is-fē'noid). A bony channel through the alisphenoid, in some animals, through which the external carotid artery passes.
Alizarin, (al-iz'ar-in). [Sy. *alizari*, madder.] = Alizaric acid = Oxynaphthalic acid = $C_{14}H_8O_4$: a red crystalline substance obtained from madder and from anthracene.

Alkaid, (al-kād'). [Ar. *al*, the; *kaid*, mourner.] =η Ursæ Majoris: a star in the constellation Ursa Major, at the end of the tail, also called Benetnasch. It derives its name from the stars in the tail being supposed to be mourners accompanying the bier formed by the four stars of the bear's body.

Alkali, (al'ka-li). [Ar. *alkal*, ashes of glass-wort.]=Alkaline carbonate: also used generally for any substance, such as ammonia, which counteracts an acid; also used for the plant of glasswort. *Fixed A.*=potash and soda. *Volatile A.*=ammonia.

Alkali group of minerals. Sal-ammoniac, kalinite, nitre, nitratite, halite: minerals composed chiefly of ammonia, potash, or soda.

Alkali metals. Cæsium, lithium, potassium, rubidium, sodium. Monad metallic elements having a great affinity for oxygen, so that they all decompose water by simple contact, and tarnish (or oxidise) in air, soft, fusible, and strongly alkaline.

Alkalimeter, (al-ka-lim'et-er). [Alkali, *q.v.*, and Gk. *metron*, measure.] An instrument to measure the amount of alkali present in any substance.

Alkaline, (al'ka-līn or al'ka-lin). [Alkali, *q.v.*] Having the properties of an alkali.

Alkaline-earth group of minerals—includes barytes, calcite, gypsum, fluor, magnesite, dolomite, &c., composed chiefly of baryta, strontia, lime, or magnesia.

Alkaline-earth metals=Barium, Calcium, strontium: dyad metallic elements which decompose water by contact, whose oxides combine very readily with water.

Alkaloids, (al'ka-loidz). [Alkali, *q.v.*, and Gr. *eidos*, form.]=Organic alkalies=vegetable alkalies: compounds, usually found in vegetables, resembling alkalis, and all containing nitrogen; such as morphia, strychnia, &c.

Alkanet, (al'ka-net). [Ar. *al*, the; *henna*, reed.]=Anchusa tinctoria, the roots of which give a dark red dye.

Allantoic acid, (al-lan-tō'ik). [Allantois, *q.v.*] =Amniotic acid: an acid obtained from the fluid of the allantois.

Allantoidea, (al-lan-toi'di-a). [Allantois, *q.v.*; and Gr. *eidos*, like.] A division of Vertebrata, including mammals, birds, and reptiles, all of which have an amnion and an allantois= Abranchiate Vertebrata.

Allantoin, (al-lan-tō'in). [Allantois, *q.v.*]= $C_4H_6N_4O_3$: a crystalline neutral substance found in the allantoic fluid of the cow.

Allantois, (al-lan-tō'is). [Gr. *allas*, sausage; *eidos*, form.] A membrane enveloping and conveying nutriment to the fœtus, in mammals, birds, and reptiles.

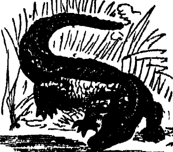
Allanturic acid, [Allantoin and Urea, *q.v.*]= Glyoxalurea=$C_3H_4N_2O_3$: an acid obtained from the decomposition, by heat, of allantoin.

Allgood, (awl'good)=Chenopodium bonus-henricus=Mercury: a common shrub belonging to Chenopodiaceæ.

Allheal, (awl-hēl)=Valeriana officinalis=Cat's valerian: a meadow herb. The name is also given to other plants.

Alliaceæ, (al-li-ā'se-ē). [Allium, *q.v.*] Sometimes used as a general term for lilies, &c.

Alligator, (al-li-gā'tor). [Sp. *al*, the; *lagarto*, lizard.] A large amphibious carnivorous reptile covered with horny scales, found in rivers of N. America =Crocodilus lucius.


Alligator.

Allioth=Alioth, *q.v.*

Alliturio acid, (al-li-tū'rik). [*All*oxantin and *uric* acid, *q.v.*]= $C_6H_6N_4O_4$, obtained from uric acid and from alloxantin.

Allium (al'li-um). [L. *allium*, garlic.] Strong flavoured herbs belonging to Liliaceæ, including garlic, wild leek, &c.

Allman's classification of Polyzoa.—Phylactolæmata, with bilateral lophophore, and epistome to mouth, Gymnolæmata, with orbicular lophophore, and no epistome.

Allochroite, (al-lok'ro-it). [Gk. *allos*, another: *chroa*, complexion.] A variety of garnet, marked by variety of colour in fusion.

Allocotyledones=Allovitellians: Van Beneden's term for mollusca, worms, polyps, infusoria, &c.

Allophane, (al'lo-fān). [Gk. *allos*, another: *phaino*, I appear.] A mineral of various colours.

Allophanic acid,(al-lo-fā'nik). [Allophane,*q.v.*] Known only in combination=$C_2H_4N_2O_3$= carbonate of urea and hydrogen=carbureic acid.

Allophanic ether=$C_4H_8N_2O_3$: a crystalline substance obtained from cyanic acid, and from urea and oxalic ether.

Allotropic, (al-lo-trop'ik). [Gk. *allos*, another; *trepo*, I turn.] Having the capability of assuming different conditions of molecular arrangement; and of undergoing a change in chemical and physical properties without any change of chemical composition.

Allotropism, (al-lot'ro-pizm). Capability of assuming different states: change in molecular arrangement.

Alloxan, (al-lok'san). [From *all*antoin and *ox*alic acid.] *Anhydrous A.*=mesoxal urea =$C_4H_2N_2O_4$: a crystalline substance obtained from uric and nitric acids.

Alloxanic acid, (al-lok-san'ik). [Alloxan, *q.v.*]=$C_8H_4N_4O_7 \cdot 3H_2O$: an unstable acid obtained from alloxan.

Alloxantin, (al-lok-san'tin). [Alloxan, *q.v.*] =$C_8H_6N_4O_8 \cdot 2H_2O$: formed by the synthesis of dialuric acid, alloxan, and water.

Alloys, (al-loiz). [F. *alloyer*, to mix.] Mixtures of two or more metals: if one be mercury=amalgam.

All-seed, (awl'sēd)=Radiola, a small herb belonging to Linaceæ.

Allspice, (awl'spīs) [Has the combined flavour of clove, nutmeg, &c.]=Dried fruit of Eugenia pimenta.

Alluvium, (al-lū'vi-um). [L. *alluvio*, earth deposited by water.] Loose gravel, sand, &c., deposited on low land by water.

Allyl, (al'lil). [Allium, *q.v.*] A hydrocarbon

$=(C_3H_5)_2$. The isolated radical of a series of organic compounds, having the same composition as glycerin, from which the allyl compounds are usually derived.
Allyl series. Allyl alcohol; A. ether; A. sulphide, &c.
Allylia, (al-lil'ī-a). [Allyl, *q.v.*]$=C_3H_7N$: a volatile alkaline base, belonging to the Allyl series.
Allylic ether, (al-lil'ik). [Allyl, *q.v.*]=Allyl oxide = allyl ether $=(C_3H_5)_2O$, an ethereal liquid.
Allylic series. [Allyl, *q.v.*]=Allyl series: a class of chemical compounds containing the radical allyl.
Almaac, (al'māk). [The Arabic name.] = γ Andromedæ: a star in the constellation Andromeda.
Almacantar, (al-ma-kan'tar). A circle parallel to the horizon.
Almaden process, (al-ma'den). [Almaden, a town in Spain.] The process of obtaining mercury by sublimation in use at the mines of Almaden.
Almanac, (al'ma-nak). Ar. *al*, the; *manak*, to reckon.] A list of astronomical occurrences, as succession of days, changes of moon, eclipses, etc.
Almandine, (al'man-dīn). [Alabanda, a town in Karia.] A variety of spinel, ruby, &c., of a violet colour; a silicate of alumina and magnesia, coloured by oxide of iron, commonly called garnet; first used at Alabanda.
Almond tree, (á'mond). [F. *amande*, almond.] =Amygdalus communis; a tree common in warm climates, having edible nuts, belonging to Drupaceæ.
Almond oil, (á'mond). From kernel of Amygdalus communis.
Almond-worts, (á'mund-wurtz). [Almond, *q.v.*; A.-S. *wyrt*, plant.]=Drupaceæ, *q.v.*
Alnilam, (al-nī'lam). [The Arabic name.]= ε Orionis: a star in the constellation Orion; in the centre of the belt.
Alnitak, (al-nī'tak). [The Arabic name.]= ζ Orionis: a star in the constellation Orion; at the eastern end of the belt.
Alnus, (al'nus). [L. *alnus*, alder.]=Alder: trees or shrubs resembling the birch, common in northern temperate countries, belonging to Betulaceæ.
Aloe, (al'ō). [Aloe, the Greek name.] An evergreen shrub or tree, belonging to Liliaceæ. The American aloe is the Agave Americana, *q.v.*
Aloeretinic acid, (al-ō-rē-tin'ik). [L. *aloe*, aloe] A bitter acid obtained from the aloe plant.
Aloes-wood. Fragrant and resinous timber. 1. Inner wood of Aquilaria ovata. 2. Wood of Aloexylon agallochum.
Aloes, (al'oz). [Aloe, *q.v.*] A bitter drug prepared from the aloe plant.
Aloetic acid, (al-ō-et'ik). [Aloes, *q.v.*] = $C_8H_5N_2O_7$: a bitter resin-like acid substance obtained from aloes.
Aloin, (al-o'in). [L. *aloë*, aloe plant.] A bitter crystalline principle, found in the aloe plants, forming the chief ingredient of the aloe drug $=C_{17}H_{18}O_7$.

Alonsine Tables=Alphonsine Tables, *q.v.*
Alopecidæ, (al-o-pes'i-dē). [Gk. *alopex*, fox.] =Fox shark, *q.v.*
Alopecurus, (al-ō-pē-kū'rus). [Gk. *alopex*, fox; *oura*, tail.]=Fox-tail grass: a common grass, having its flowers in thick heads.
Alosa, (al-ō'sa)=Shad: a fish of the herring kind.
Alouettes, (a-lō-etts)=Howling monkeys, *q.v.*
Aloysia, (al-oi'si-a). A genus of plants, belonging to Verbenaceæ, of which the sweet-scented vervain is an example.
Alpaca, (al-pak'a). [Paka, native name.] 1. A South American animal, of the camel kind, having very long and fine hair; sometimes called Peruvian sheep. 2. A textile fabric made from its hair, much used in manufactures.


Alpaca.

Alpetragius, (al-pe-tra'ji-us). A plain in the moon, *q.v.*
Alpha, (al'fa). [Gk. *alpha*, first letter of the alphabet.] Used to designate the brightest star in a constellation: thus, α Lyræ, α Ursæ Minoris, &c.
Alphard, (al'fārd). [The Arabic name.] = α Hydræ: the chief star in the constellation Hydra.
Alphecca, (al-fek'ka). [The Arabic name.] =Gemma=α Coronæ borealis: the chief star in the constellation Northern Crown.
Alpherat, (al'fer-at). [The Arabic name.]=α Andromedæ: a star of the first magnitude, the chief star of the constellation Andromeda.
Alphirk, (al'firk). [The Arabic name.]=β Cephei: a star in the constellation Cepheus.
Alphonsine Tables (al-fon'sīn). A collection of astronomical facts and tables made in the reign of Alonzo X. of Arragon.
Alphonsus, (al-fon'sus). A plain in the moon, *q.v.*
Alpine warbler. A small bird, belonging to the genus Accentor, also called Motacilla alpina.
Alpinia, (al-pī'ni-a). [Alpine, mountainous.] 1. A sub-genus of Renealmia, including the Galangule. 2. A genus of Zingiberaceæ, consisting of Alpine plants.
Alpiniaceæ (Lk.), (al-pin-i-ā'se-ē). [Alpinia, *q.v.*]=Zingiberaceæ, *q.v.*
Alshain, (al-shān'). [The Arabic name.]=β Aquilæ: a star in the constellation Aquila.
Alsinaceæ, (al-sin-ā'se-ē). [Alsineæ, *q.v.*]= Caryophyllaceæ, *q.v.*
Alsineæ, (al-sin'e-ē). [Gk. *alsos*, sacred grove] =Clove-worts=Caryophyllaceæ, *q.v.*
Altaic mongolidæ, (al-tā'ik mon-gol'i-dē). [Altaic mountains.] Divided into Seriform and Turanian groups. Seriform=Chinese, Siamese, Burmese, etc. Turanian = Mongolian, Turk, etc.
Altair, (al'tār). [The Arabic name.]=α Aquilæ: a star of the first magnitude; chief in the constellation Aquila.

Altazimuth, (al-taz′i-muth). [From *alt*itude and *azimuth*.] An instrument for measuring both the altitude and azimuth of a star, &c.

Altered strata. Those that have been modified, since their deposition, by heat, moisture, and other forces.

Alternation of generations. The phrase used to express the recurrence of similar characters in every second or third generation only: obtains in some species of every kind of invertebrate animal.

Althæa, (al-thē′a). [Gk. *altho*, I heal.]= Marsh mallow, hollyhock, &c.: an herb with green petals and downy stem, belonging to Malvaceæ.

Althionic acid, (al-thī′on-ik). [*Al*cohol, *q.v.*, and Gk. *theion*, sulphur.] = $C_2H_6SO_4$: a crystalline substance obtained by the action of sulphuric acid on alcohol.

Altica, (al′ti-ka). [Gk. *altikos*, active.] = Garden flea: an insect.

Altimeter, (al-tim′e-ter). [L. *altus*, high; *metrum*, measure.] An instrument for measuring heights.

Altingiaceæ, (al-ting-i-ā′se-ē) = Liquidambars: trees belonging to Amentales.

Altitude, (al′ti-tūde). [L. *altitudo*, height.] The height of a star, &c., above the horizon, measured by the angle of a vertical circle passing through both.

Alto-relievo, (al′tō-rē-lē′vō) = High relief: sculptures in which figures are connected with a background, but are partially detached.

Altrices, (al-trī′ses). Term used by Owen for a sub-division of birds, including the flying birds: Raptores, Scansores, Volitores, and Cantores.

Alum, (al′um). [L. *alumen*, alum.]=Potassio-aluminic sulphate=$KAl2SO_4 \cdot 12H_2O$: A colourless crystalline acid substance, formed naturally by the action of sulphuric acid of volcanoes upon potassium and aluminum; also obtained from alum schist: much used in dyeing, painting, &c.

Alums. Double sulphates, of which alum is the type.

Alum battery. A galvanic battery consisting of carbon and zinc (unamalgamated) in sand moistened by a solution of alum in water: is constant for two years.

Alum-bay beds=Lower Bagshot.

Alum root = Geranium maculatum, the root of which contains alum.

Alum slate = Alum schist = alum ore. A bluish-grey rock, chiefly silicate of alumina, from which alum is obtained.

Alum stone. A rock containing alum, generally found in volcanic districts.

Alumina, (al-ū′min-a). [L. *alumen*, alum.]= Al_2O_3=alumine=oxide of aluminum; the basis of all clays: corundum, emery, ruby, and sapphire, are varieties of alumina.

Alumina group of minerals: Includes corundum, sapphire, ruby, &c., varieties of anhydrous alumina.

Aluminate group of minerals, (a-lū′mi-nāt). [Alumina, *q.v.*] Includes spinel, pleonaste, balas-ruby, &c., varieties of aluminate of magnesium, with admixture of other metals.

Aluminic, (al-ū′mi-nik). Containing aluminum as the base of a compound.

Aluminite, (a-lū′mi-nīt). [Alumina, *q.v.*]= Websterite: a white opaque mineral, chiefly hydrated sulphate of alumina.

Aluminium, (al-ū-min′i-um). [Alum, *q.v.*]= Aluminum, *q.v.*: one of the earth-metals.

Aluminium bronze. An alloy of 1 part aluminium with 9 parts of copper.

Aluminous cake, (a-lū′min-us). A sulphate of alumina, prepared from china clay and sulphuric acid; used as a cheaper substitute for alum in manufactures.

Aluminum, (al-u′min-um). [Alum, *q.v.*]=Al‴: a white, malleable, sonorous metal, but little acted upon by oxygen, which is the base of all clay rocks.

Alunite, (a′lū-nīt). [F. *alun*, alum.]=Alum stone, *q.v.*

Alunogen, (al-ū′nō-jen). [F. *alun*, alum; Gk. *gennao*, I produce.] A white fibrous mineral, frequently found on the walls of mines and quarries; chiefly hydrous sulphate of alumina: also called feather alum, and hair salt.

Aluta, (a-lū′ta). [L. *aluta*, soft leather]= Leather stone: a mineral somewhat resembling leather in appearance.

Alveolar border, (al-vē′o-lār). [L. *alveolus*, a little cell.] The bone bordering the jaw, into sockets in which the teeth are fitted.

Alveolar plates, (al-vē′o lar). [L. *alveolus*, a little cell.] Bony plates to which teeth are fastened by anchylosis.

Alveoli, (al-vē′o-li). [L. *alveolus*, a little hollow.] Cavities in jaw-bones of animals, in which the teeth are fixed.

Alveolitidæ, (al-vē-o-lit′i-dē). [L. *alveolus*, a little cell.] A group of tabulate corals, including alveolites and cœnites.

Alveolus, (al-vē′o-lus). [L. *alveolus*, a little cavity] Singular of Alveoli, *q.v.*

Alwaida, (al-wā′da) = β Draconis: a star in the constellation Draco.

Alyssidæ, (a-lis′i-dē). [Alyssum, *q.v*] A subdivision of Pleurorhizeæ (Brassicaceæ), including whitlow grass, scurvy grass, &c., said to have been used as a cure for hydrophobia.

Alyssum, (a-lis′sum). [Gk. *a*, not; *lysso*, I am mad]=Madwort *v.* Alyssidæ.

Amacratic, (am-a-krat′ik). [Gk. *hama*, together, *kratos*, strength.] A lens so arranged as to collect all the rays of light falling on it into one focus.

Amadou, (am′a-dō). [The F. name: L. *ad*, to; *manus*, hand: *dulce*, soft.]=German tinder: a spongy inflammable substance prepared from the fungus Boletus by its being steeped in saltpetre.

Amalgam, (a-mal′gam). [Gk. *hama*, with; *gameo*, to join.] An alloy of two or more metals, of which one is mercury.

Amalgamated zinc, (a-mal′gam-āt-ed)=zinc coated with mercury.

Amalgamation, (a-mal-gam-ā′shun). [Amalgam, *q.v.*] The combination of any other metal with mercury; especially used for the

tebrata, including all those of which the fœtus has an amnion; also called Abranchiate Vertebrata, *q.v.*

Amœba, (am-ē'ba). [Gk. *amoibe*, permutation.] Simple microscopic organisms, found in the alimentary canal of cockroaches, &c., almost the simplest known forms of animal life, take in food at any point of the body, and undergo several changes of form, hence also called Proteus. Belong to Rhizopoda.

Amomales, (am-ō-mā'lez). [Amomum, *q.v.*] Plants found in hot climates, resembling the Amomum, having petaloid flowers and leaves with diverging veins. Ex., Banana, Ginger-plant, &c.

Amomeæ, (am-ō'me-ē). [Amomum, *q v.*] =Gingerworts=Zingiberaceæ. A sub-division of Amomales.

Amomum, (a-mō'mum). [Gk. *amomos*, spotless.] A plant belonging to Zingiberaceæ, with white flowers; the type of Amomales.

Amorphous, (a-mor'-fus). [Gk. *a*, not; *morphe*, regular form.] Used of minerals that are not crystalline, and therefore have no regular and symmetrical form; also used generally for any substance having no definite form.

Amorphozoa, (am-or-fo-zō'a) [Gk. *a*, not; *morphe*, regular form, *zoon*, animal.] A general term for animals having no definite shape, such as sponges, &c.

Ampelic acid, (am'pe-lik). [Ampelite, *q.v.*] An acid obtained from bituminous shale.

Ampelideæ, (am-pe-lid'e-ē). [Gk. *ampelos*, a vine.]=Vitaceæ, *q.v.* A family of plants of which the grape-vine is the type.

Ampelin, (am'pe-lin). [Ampelite, *q.v.*] A substance like kreosote, extracted from bituminous shale.

Ampelite, (am'pe-līt). [Gk., *ampelos*, a vine.] =alum-slate, *q v.*: named from being used to kill vine parasites.

Ampère's hypothesis of constitution of gases, that at the same temperature and pressure a given volume of any gas will always contain the same number of molecules. *A.'s theory of magnetism*, that every molecule of a body when magnetised has an electric current passing through it.

Amphibia, (am-fib'i-a). [Gk. *amphi*, both; *bios*, life]=Frogs; &c.: vertebrate animals having gills when young, and when adult usually both gills and lungs, sometimes lungs only; so that when young they are water animals, and when adult can usually live on either land or water: resemble higher vertebrata in [illegible]ing limbs and red blood, but differ in [illegible] no amnion or allantois: allied to Ganoi[illegible]s.

Amphibia[illegible](am-fib'i-anz). [Gk. *amphi*, both; *bios*, life.]=Amphibia, *q.v.*

Amphibichnites, (am-fib-ik'nītz). [Amphibia, *q.v.*; Gk. *ichnos*, footstep.] Fossil footprints of amphibia.

Amphibole, (am-fib'o-le). [Gk. *amphibolos*, doubtful.]=Hornblende = $5MgCaFeMnO,6SiO_2x(KCa)F_2$=amphibolite, a mineral easily mistaken for augite=Black schorl, a complex silicate.

Amphibole and Pyroxene group of minerals, includes hornblende and other varieties of Amphibole, and also augite and other varieties of Pyroxene.

Amphibrya, (am-fi-brī'a) = Endlicher's term for Endogens, *q.v.*

Amphicœlia, (am-fi-sē'li-a). [Gk. *amphi*, both sides; *koilos*, hollow.] Vertebræ that are biconcave, or have both surfaces hollow; as in most fishes and some reptiles.

Amphicœlous, (am-fi-sē'lus). [Gk. *amphi*, both sides; *koilos*, hollow.] Used to describe vertebræ, both ends of which are concave.

Amphicyon, (am-fik'i-on). [Gk. *amphi*, doubt; *kyon*, dog.] A fossil quadruped, carnivorous, and supposed to have some resemblance to a dog; apparently intermediate between digitigrade and plantigrade animals.

Amphidiscs, (am'fi-disks). [Gk. *amphi*, both sides; *diskos*, quoit.] Spicula surrounding the gemmules of Spongilla, resembling two toothed wheels on one axle.

Amphidotus=Heart-urchins; a variety of sea-urchins=Spatangus, *q.v.*

Amphigens, (am'fi-jenz). [Gk. *amphi*, both sides; *gennao*, I grow.]=Amphigenæ: plants which grow in all directions; used by Brongniart for algæ, fungi, and lichens=Thallogens, *q.v.*

Amphilestes, (am-fi-les'tēz). A small animal belonging to Mammalia, fossil remains of which are found in the Stonesfield-slate rocks.

Amphioxus, (am - fi - oks'us). [Gk. *amphi*, double; *oxus*, pointed.] A fish, about 2 in. long, having no brain, a simple heart, and a respiratory system resembling that of a mollusc; mistaken for a mollusc when first discovered, and named Limax lanceolatus: intermediate between fishes and mollusca. Also called Branchiostoma, Lancelet, and Pharyngobranchia.

Amphipneusta, (am-fip-nū'sta). [Gk. *amphi*, both ways; *pneo*, I breathe.]=Perennibranchiate amphibia: animals which retain their gills in the adult state, such as the Proteus and Siren.

Amphipoda, (am-fip'o-da). [Gk. *amphi*, both ways; *podes*, feet.] Crustacean animals having sessile and immovable eyes, and appendages resembling feet (whence the name), which serve for both walking and swimming.

Amphiprostyle, (am-fi-pros'tīl.) [Gk. *amphi*, both sides; *prostyle*, portico.] A rectangular building, having a prostyle or portico at each end, but no columns.

Amphisbena, (am-fis-bē'na). [Gk. *amphis*, both ways; *baino*, I go.] A non-venomous serpent, of nearly uniform thickness in body and tail, found in tropical America and East Indies, able to move readily either way.

Amphiscii (am-fis'si-ī). [Gk. *amphi*, both ways; *skia*, shadow, doubly shadowed.] Inhabitants of the torrid zone, whose shadows are sometimes to the north, and sometimes to the south.

Amphitheatre, (am-fi-thē'a-ter). [Gk. *amphi*, around; *theatron*, theatre.] A large building, usually circular or elliptical, with seats, in tiers, on all sides of it.

Amphitherium, (am-fi-thē'ri-um). [Gk. *amphi*, doubtful; *therion*, wild beast.] A small animal, belonging to Mammalia, probably marsupial, remains of which are found in Stonesfield-slate: also called Thylacotherium.

Amphithoe, (am-fi'tho-e). An amphipodous crustacean animal.

Amphitrite, (am-fi-trī'te). [Classical.] 1. One of the asteroids, *q.v.* 2. A tube worm.

Amphitropal, (am-fit'ro-pal). [Gk. *amphi*, on both sides; *tropeo*, I turn.] Used of an embryo curved so much that the ends are brought nearly together.

Amphiuma, (am-fi-ū'ma). An eel-like amphibious reptile, with very small feet, found in ponds, &c., exclusively North American.

Amphodonta, (am-fo-dont'a). [Gk. *amphi*, altogether; *odontes*, teeth.] Used by Aristotle for Feræ and Primates: having teeth of three kinds, continuous.

Amplexicaul, (am-pleks'i-kawl). [L. *amplexus*, a surrounding; *caulis*, stem.] Used of leaves which partially enfold the stem.

Amplexus, (am-pleks'us). [L. *amplexus*, a surrounding.] A rugose coral, of the carboniferous period.

Amplitude, (am'pli-tūd). [L. *amplitudo*, width.] 1. The distance of a heavenly body from the east in rising; or the west in setting, measured by the angular distance. 2. The distance through which the atoms of air or ether vibrate in a sound-wave or light-wave; upon which depends the loudness of the sound and the intensity of the light.

Ampulla, singular of Ampullæ.

Ampullæ, (am-pul'lē). [L. *ampulla*, a bottle.] 1. Dilatations, or widenings in the semicircular canals of the ear. 2. Dilatations found in leaves, &c., of some aquatic plants, by which they are made buoyant.

Ampullæ Polianæ, vesicles in star-fishes, sea-cucumbers, &c., in which nutritive fluid is stored.

Amygdaleæ, (a-mig-dal'e-ē). [Gk. *amygdalos*, almond tree.] A division of the order Rosaceæ (containing the cherry, plum, and almond trees), marked by its fruit being a drupe=Drupaceæ, *q.v.*

Amygdalic acid, (a-mig'da-lik). [Amygdalin, *q.v.*]=$H_2C_{40}H_{52}O_{25}$: obtained from amygdalin.

Amygdalin, (a-mig'da-lin). [Gk. *amygdale*, almond.]=$C_{20}H_{27}NO_{11}3H_2O$; a sweet crystalline substance, the principle of the almond. A compound of the benzoic series.

Amygdaloid, (a-mig'da-loid). [Gk. *amygdale*, almond; *eidos*, form.] A variety of trappean rocks, containing almond-shaped mineral nodules.

Amyl, (am'il). [Amylum, *q.v.*]=$(C_5H_{11})_2$=Decatyl hydride=Diamyl=Amyl amylide: an aromatic liquid hydrocarbon, obtained in the distillation of coal.

Amyl alcohol, (am'il). [Amyl, *q.v.*]=Fousel oil=potato spirit=$C_5H_{12}O$: a clear transparent inflammable liquid, with a burning taste and strong odour, found in brandy made from potatoes, barley, etc.

Amyl hydride, (am'il). [Amyl, *q.v.*]=Pentyl hydride=C_5H_{12}, used as an anaesthetic: a clear transparent combustible liquid, evaporating very rapidly.

Amyl oxide, (am'il). [Amyl, *q.v.*]=$(C_5H_{11})_2O$=Amyl ether: a fragrant liquid, obtained from fousel oil and from amyl chloride.

Amylene, (am'il-ēn). [Amyl, *q.v.*]=C_5H_{10}: a colourless volatile liquid hydrocarbon of the olefine series, obtained from amyl alcohol: its vapour destroys sensibility, but not consciousness.

Amylia, (a-mī'li-a). [Amyl, *q.v.*]=C_5H_{11}, H_2N: a colourless inflammable liquid alkaline base, obtained from fousel oil.

Amyloids, (am'il-oids). [Amylum, *q.v.*; Gk. *eidos*, form.] Substances used as food, such as starch, dextrine, sugar, &c., which consist mainly of carbon, oxygen, and hydrogen.

Amylum, (am'i-lum). [The L. name.]=Starch=Amidin, *q.v.*

Amyridaceæ, (a-mī-rid-ā'se-ē). [Amyris, *q.v.*]=Amyrids: tropical trees and shrubs, such as the balsamodendron, with small flowers, and hard durable timber, belonging to Rutales.

Amyrideæ, (a-mi-rid'e-ē). [Amyris, *q.v.*]=Myrrh, frankincense, &c: tropical plants yielding odorous resins=Amyridaceæ, *q.v.*

Amyris, (a-mī'ris), the balsam tree: the type of Amyridaceæ.

Anabas, (an'a-bas). [Gk. *anabaino*, I ascend.]=climbing perch: an Indian fish resembling the perch, which is able to live for some time out of water=Perca scandens=Anthias testudineus=Tree-climber.

Anableps, (an'a-bleps). [Gk. *anablepo*, I look up.] A fish of Guiana, with cylindrical body, flattened head, and eyes so divided as to seem double, giving the power of looking up and down at the same time.

Anacanthini, (an-a-kan'thi-nī). [Gk. *anakanthos*, without horns.] Fishes, such as the cod, sole, &c., which have soft fin rays, and the ventral fins, if any, near the throat.

Anacardiaceæ, (an-a-kär-di-ā'se-ē). [Gk. *ana*, like; *kardia*, heart.]=Anacards: trees and shrubs, chiefly tropical, usually resinous or milky, with poisonous sap, (Ex. Cashew, Sumach), belonging to Rutales.

Anacharideæ, (an-a-kar-id'e-ē). [Gk. *ana*, without; *charis*, elegance.]=Hydrocharidaceæ, *q.v.*

Anacharis, (a-na'ka-ris)=Water thyme: an aquatic herb with small green flower, belonging to Hydrocharidaceæ: grows very rapidly.

Anaclastics, (an-a-klas'tiks). [Gk. *anaklasis*, deflection of light.]=Dioptrics, *q.v.*

Anadromous, (an-ad'ro-mus). [Gk. *ana*, up; *dromos*, course.] Used of sea fish that visit rivers at certain seasons, such as the salmon and sturgeon.

Anæmia, (an-ē'mi-a). A disease caused by too little iron in the food.

Anæsthesia, (a-nēs-thē'si-a). [*Anaisthesia*, the Greek word]. Loss of sensation.

Anæsthetics, (a-nēs-thet'iks). [Gk. *an*, without; *aisthesis*, feeling]. Agents that produce insensibility to pain, or to feeling generally; used at surgical operations. Ex. Chloroform, methylic alcohol, chloride of methyl, nitrous

oxide, sulphuric ether, amyl hydride, ethyl hydride, &c.

Anagalleidæ, (an-a-gal-ī'dē). [Anagallis, *q.v.*] =Primulaceæ, *q v.*

Anagallis, (an-a-gal'lis). [Gk. *anagelao*, I laugh.]=Pimpernel; an herb with red and blue flowers, belonging to Primulaceæ.

Anaglyph, (an'a-glif). [Gk. *ana*, up; *glypho*, I carve.] A sculptured ornament.

Anaima, (an-ī'ma). [Gk. *anaimos*, without blood.] Used by Aristotle for invertebrate animals.

Anal, (a'nal). [Anus, *q.v.*] Belonging to the anus, *q.v.*

Analcime, (a-nal'sīm). [Gk. *a*, not; *alkimos*, strong. Analcite: a mineral of the Zeolite group, chiefly silicate of sodium and aluminum, feebly electrical; also called cubic zeolite.

Analectrics, (an-a-lek'triks). [Gk. *an*, not; Electric, *q.v.*] Substances, such as metals, that are not electrified by friction, unless insulated; now called conductors, *q.v.*

Analeptics, (an-a-lep'tiks). [Gk. *analepsis*, recovery.] Means of restoring health or vigour.

Anallantoidea, (an-a-lan-toi'de-a). [Gk. *an*, without; Allantois, *q v.*=Anamniota, a division of Vertebrata, including Amphibia and Fishes, marked by the absence of any allantois.

Anallantoidians, (an-a-lan-toi'di-anz). [Gk. *an*, without; Allantois, *q.v.*]=Anallantoidea.

Analogues, (an'a-lōgz). [Gk. *ana*, according to; *logos*, ratio.] Objects which have a general resemblance in functions, as the wing of a bird, the fin of a fish, or the patagium of a bat.

Analysation, (an-a-līz-ā'shun). The separation of a compound body into its constituents, and the measurement of these.

Analyser, (an-a-lī'zer). [Analysis, *q.v.*] In a polarising apparatus, the portion which detects and exhibits the polarised ray.

Analysis, (a-nal'is-is). [Gk. *analyein*, to unloose]. The separation of a compound body into its constituents. *A. by combustion*, in Organic Chemistry, usually by burning the carbon into carbonic anhydride, and the hydrogen into water, so that they can be measured.

Analytical geometry, (an-al-it'ik-al)=Algebraical geometry, *q.v.*

Anamese, (an'a-mēs). [A variety of the Seriform stock.] *v.* Altaic Mongolidæ.

Anamesite, (an-am'e-sīt). [Gk. *anamesos*, intermediate.] A variety of basalt, intermediate between basalt proper and dolerite.

Anamniota, (an-am-ni-ō'ta). [Gk. *an*, without; *amnion*, *q.v.*] Anallantoidea: vertebrate animals having no amnion=amphibia and fishes.

Anamorphosis, (an-a-mor'fo-sis). [Gk. *anamorphosis*, renovation.] A distorted drawing which looks correct when viewed from a certain point.

Anamphodonta, (an-am-fo-don'ta). [Gk. *an*, not; Amphodonta, *q.v*] A name used by Aristotle for a group of animals, including the Cetacea, Ungulata, and Glires, which have not continuous rows of teeth.

Ananas, (a-na'nas). Ananassa=Pine apple: a plant belonging to Bromeliaceæ, the fruit of which is large and succulent.

Ananchytes, (an-an-kī'tēz). [Gk. *ana*, up; *cheo*, I pour.] Fossil echinoderms peculiar to cretaceous beds; also called fairy-loaves and shepherds'-crowns, from their helmet-like form.

Anandræ, (an-and'rē). [Gk. *an*, without; *aner*, man.]=Thallogens, *q v.*

Ananths, (an'anths). [Gk. *an*, without: *anthos*, flower.] Used by Martius for flowerless plants.

Anapophysis, (an-a-pō'fis-is). [Gk. *ana*, backwards; *apophysis*, a branch.] A small projection from the last of the dorsal vertebræ.

Anaptotic, (an-ap-tō'tic). [Gk. *ana*, back; *ptosis*, case.] Falling back from inflexion: used of languages (such as the English) that gradually lose the use of inflexions.

Anarthropoda, (an-ar-throp'o-da). [Gk. *a*, without; *arthros*, joint; *pous*, foot.] Annulose animals, having no articulated limbs; such as Annelida, Chætognatha, and Gephyrea: a sub-division of Annulosa, *q.v.*

Anas, (a'nas.) The Latin name at first used by Linnæus for a group of aquatic birds, including the swan, goose, and duck, having blunt bills, fleshy tongues, and webbed feet; now confined to one genus of duck-like birds, of which the shoveler is the type; belonging to Natatores, *q.v.*

Anastomosis, (an-as-to-mō'sis). [Gk. *anastomosis*, an opening.] Growing together of two parts by inosculation, as in grafting.

Anatidæ, (a-nat'i-dē). [Anas, *q.v.*]=Ducks: a family of aquatic birds, belonging to Natatores, *q.v.*

Anatomy, (a-nat'o-mi). [Gk. *ana*, apart; *tome*, a section.] The science of the relation to each other of the various parts of an animal or plant; the science of the structure of organic beings: comprises anthropotomy, *q.v.*, and zootomy, *q.v.*

Anatropal, (an-at'ro-pal). [Gk. *ana*, back; *trepo*, I turn.]=Anatropous: having the ovule inverted.

Anchoic acid, (ang-kō'ic). [Gk. *agko*, I choke.]=Lepargylic acid=$H_2C_9H_{14}O_4$: produced by the action of nitric acid upon oleic acid, named from its irritating effects upon the throat and lungs.

Anchor, (ang'kor). [L. *ancora.*] An iron instrument for holding ships at rest in the water. *Stream A.*, used in rivers. *Kedge A.*, an extra light anchor. *A.* consists of shank, fluke, and stock.

Anchor lining, a casing interposed between the anchor and side of the ship.

Anchovy, (an-chō'vi). [*Anchova*, the Spanish name.]=Engraulis encrasicolus: a small fish resembling the herring, common in the Mediterranean, used as a sauce; also found on the coast of Devonshire and Cornwall.

Anchusa, (ang-kū-sa)=Alkanet: an herb with blue and purple flowers, belonging to Boraginaceæ. *A. arvensis*=Bugloss.

Anchylosis, (an-ki-lō'sis). [Gk. *agkylosis,* bending.]=Ankylosis, *q.v.*

Ancon, (an'oōn). [The Latin word.] An elbow or angle of a building: from which is derived the words coin=corner and quoins=corner-stones.

Anconeus muscle, (ang-kō'ne-us). [L. *ancon,* elbow.] A small muscle, connecting the humerus and ulna, at the elbow.

Ancylotherium, (an-sī-lō'thē'ri-um). An animal between the extinct mastodon and living pangolin, known only by fossil remains.

Ancylus, (an'si-lus)=Fresh-water limpet: a molluscous animal belonging to Limnæadæ.

Ancyropus, (an-sī'ro-pus). [Gk. *ankura,* anchor; *pous,* foot.] A tortoise-like animal, known only by fossil footprints.

Andalusite, (an-da-loo'sīt). [Andalusia, in Spain.] A mineral of the topaz group, chiefly silicate of aluminum, variously coloured by iron and other metals.

Andræa, (an-drē'a). A genus of mosses; the type of the division Andræaceæ.

Andræaceæ, (an-drē-ā'ce-ē). [Andræa, *q.v.*] =Split mosses: red or brown moss-like plants, found, in cold climates, on mountain sides, belonging to Muscales.

Androcœum, (an-drō-sē'um). [Gk. *aner,* man.] =Stamens: the fructifying organ in plants.

Androgynous, (an-drō'jin-us). [Gk. *aner,* man; *gyne,* woman.]=Hermaphrodite: in animals, such as have the male and female organs in the same body; in plants, those having them both in the same flower, or having both male and female flowers.

Andromeda, (an-drom'e-da). [Classical.] 1. A small shrub with pink or white flowers, belonging to Ericaceæ. 2. Fossil remains of these found in Lower Miocene rocks. 3. A N. constellation, of which Alpherat and Mirach are the chief stars.

Androphores, (an'dro-fōrz). [Gk. *aner,* man; *phero,* I carry.]=Medusiform gonophores, *q.v.,* which carry the spermatozoa of Hydrozoa.

Anelectrics, (an-e-lek'triks). [Electricity, *q.v.*] Substances, such as metals, that readily conduct electricity, and cannot be electrified by friction=Analectrics, *q.v.*

Anelectrotonus, *v.* Electrotonus.

Anellata, (an-ne-lā'ta). [L. *anellus,* a little ring.]=Annelida, *q.v.*: ringed worms.

Anemograph, (an-em'ō-graf) [Gk. *anemos,* wind; *grapho,* I write.] An apparatus which registers, automatically, the amount and variations of the wind's force.

Anemometer, (an-e-mom'e-ter). [Gk. *anemos,* wind; *metron,* measure.] An instrument which measures the velocity and direction of the wind.

Anemone, (a-nem'o-ne or a-ne-mō'ne). [Gk. *anemone,* wind flower.]=Wind flower; corn rose: a flower of the crowfoot kind, belonging to Ranunculaceæ. *Sea-anemone*=Actinia, *q.v.*

Anemoscope, (an-em'os-kōp). [Gk. *anemos,* wind; *skopeo,* I show.] An instrument to show the direction of the wind.

Anenterati, (an-en-ter-ā'ti). [Gk. *an,* in; *enteron,* intestines.] Used by Leuckart for a division of Vermes, including Acanthocephalis and Cestodes.

Aneroid barometer, (an'e-roid). [Gk. *a,* not; *neros,* wet; *eidos,* form.] An instrument which measures the pressure of the atmosphere by its action on a small watch-shaped metallic box, from which the air is removed. *Maury's B.* is an improved form of aneroid.

Anet, (a'net) [Anethum, *q.v.*]=Dill seed=Anethum graveoleus: a species of Anethum.

Anethum, (a-nē'thum). [*anethon,* the Greek name.]=Dill: a plant, belonging to Apiaceæ: formerly applied also to fennel, which is now separated and called Fœniculum.

Aneurism, (an-ū'rizm). [Gk. *aneuruno,* I widen.]=Extension or widening: used especially of an artery.

Angel fish, (an'jel). [Angel and fish, *q.v.*]=Squatina angelus: a fish remarkable for its white colour and wing-like fins.

Angelic acid, (an-jel'ik). [Angelica, *q.v.*]=$HC_5H_7O_2$: solid acid found in angelica roots; also obtained by the action of caustic potash on essence of camomile.

Angelica, (an-jel'ik-a). [Gk. *aggelikos,* angelic.] A tall herb with white or purple flowers, a pleasant odour, used in medicine, belonging to Apiaceæ.

Angeliceæ, (an-jel-is'e-ē). [Angelica, *q.v.*] A sub-division of Seselineæ, including Angelica.

Angiography, (an-ji-og'ra-fi). [Gk. *angeion,* vessel; *graphe,* description.] Description of the vessels of an organised body.

Angiology, (an-ji-ol'o-ji). [Gk. *angeion,* vessel; *logos,* discourse.] The science of the vessels of organic bodies.

Angiospermæ, (an-ji-o-sper'mē). [Gk. *angeion,* a vessel; *sperma,* seed.] A general term for plants whose seeds are inclosed in a pericarp.

Angiotomy, (an-ji-ot'o-mi). [Gk. *angeion,* vessel; *tome,* cutting.] Dissection of the vessels of an organised body.

Angle, (ang'gl). [L. *angulus,* corner.] 1. The point where two lines meet. 2. The difference between the directions of two lines in the same plane.

Angler fish=Lophius piscatorius=Fishing frog: a fish some 4 feet long, having some degree of resemblance to a frog.

Anglesite, (ang'gl-sīt). One of the lead group of minerals, chiefly sulphate of lead, crystallising in rhombs.

Angola tree=Pigeon-pea: a shrub with long leaves and edible pea-like fruit.

Anguilla, (an-gwil'la). [The Latin name.]=Muræna, *q.v.*=Eel: a snake-like fish, belonging to Apodes.

Anguillulidæ, (an-gwil-lū'lid-e). [L. *anguilla,* eel.] Free nematoids: worm-like animals, of small size, belonging to Scolecida, *q.v.*; found in fresh water and on sea-shore.

Anguis, (ang'gwis). [L. *anguis,* a snake.]=Slow-worm=blindworm: a small snake-like reptile, belonging to Lacertilia, *q.v.*

Anharmonic ratio, (an-hār-mon'ik). [Gk. *an,* without; *harmonia,* harmony.] See Ratio.

Anhydrides, (an-hī'drīdz). [Gk. *an,* without; *hydor,* water, *q.v.*] Oxygen compounds in which there is no water, such as carbonic

anhydride, which form acids when combined with water=CO_2. *Metallic A.*=M_2O_5. *E.g.*, *Antimonic A.*=Sb_2O_5. *Organic A.*=Anhydrous acids=acids not containing water=$(C_nH_{2n-1}O)_2O$. *E.g.*, Acetic acid=$C_4H_6O_3$.

Anhydrite, (an-hī'drīt) = Karstenite = anhydrous gypsum: a variety of sulphate of lime containing no water.

Anhydro salt, (an-hī'dro). Salts having no water in combination with them.

Anhydrous, (an-hī'drus). [Gk. *an*, without; *hydor*, water.] Free from admixture of water.

Aniles, (an'īlz). [Aniline, *q.v.*] Compounds formed by the union of aniline with dibasic acids and the abstraction of water.

Anilic acid, (an'il-ik). [Aniline, *q.v.*]=Indigotic acid=Nitro salicylic acid, obtained from action of nitric acid on indigo.

Anilidated acids, (an-il-i-dāt'ed). [Aniline, *q.v.*] Compounds of aniline and dibasic acids.

Anilides, (an'il-īdz). [Aniline, *q.v.*] Compounds formed by the union of aniline with monobasic acids and the abstraction of water.

Aniline, (an'i-līn). [Port. *anil*, indigo.]=$C_6H_5 \cdot H_2N$ = Phenylia = Kyanol = Phenylamine=Phenamide=Benzidam: a colourless aromatic poisonous liquid, which readily unites with oxygen, acting as a base=Ammonia with one atom of H replaced by phenyl =$H_3N-H+C_6H_5$, obtained from coal.

Aniline bases=$C_nH_{2n-5}N$=Aniline, Cuminylia, Cymmylia, Toluylia, &c.

Aniline dyes. Dye stuffs obtained from aniline. *Mauve*, a violet-coloured dye stuff prepared from aniline by acting on it by potassic dichromate. *Roseine*, a rose-coloured dye stuff. *Magenta*, a red dye stuff. *Rosaniline*, the base of a red dye. *Triphenyl Rosaniline*, a blue dye stuff.

Animal, (an'i-mal). [L. *anima*, breath or life.] An organism having power to feed on other organic substances, to move either in part or as a whole; capable of sensation, of reproduction, and of growth, which inspires oxygen, and respires carbonic acid, and whose size, specific gravity, solidity, temperature, and power of locomotion, are usually greater as its development is more complex.

Animal electricity. Found in fishes, such as the torpedo and electric eel, which, when touched, give an electric shock resembling the discharge of a Leyden jar.

Animal flowers, a popular name for Actinozoa, *q.v.*

Animal heat, caused by chemical changes in the body; increased by activity; highest in birds, lowest in invertebrates. *A. H.* of man about 98° F., of swallow, 111° F.

Animal kingdom, includes all animals, arranged in groups according to general resemblances. Most modern division, that of Huxley, into

Vertebrata.

Mollusca.	Annulosa.
Molluscoida.	Annuloida.
Cœlenterata.	Infusoria.

Protozoa.

For divisions by various naturalists, see under the given name.

Animalcule, (an-i-mal'kūl). [L. *animalculum*, little animal.] A very minute organism=Infusoria, *q.v.*


Animalcules.

Animalia, (an-i-mā'li-a)=Animal kingdom, *q.v.*

Anione, (an'i-ōn). [Gk. *ana*, up; *ion*, going.] The electro-negative constituent of a chemical compound, which, in decomposition by electricity, goes to the anode, or positive pole.

Anisamide. (an'is-a-mīd). [Anisyl, *q.v.*]=$C_8H_9O_2N$=Ammonia in which one atom of H is replaced by one of anisyl: one of the primary monamides.

Anise, (an'is). [*Anison*, the Gk. name.]=Pimpinella anisum, also called anny: a plant with aromatic seeds, belonging to Umbelliferæ.

Aniseed (essence of). [Anise, *q.v.*]=$C_{10}H_{12}O$: a crystalline substance from oil of A., found in the seeds of anise, fennel, &c.

Anishydramide, (an-is-hīd'ra-mīd). [*Anisyl*, *hydride*, and *amide*.] $C_{24}H_{24}N_2O_3$: a compound of ammonia and anisyl hydride; one of the hydramides, *q.v.*

Anisic series, a series of chemical compounds containing the radicle anisyl.

Anisoine, (an'i-soīn). [Anise, *q.v.*] A white resinous substance obtained from essence of aniseed.

Anisol, (an'i-sol). [Anise, *q.v.*]=C_7H_8O=Phenomethol = Methyl phenate; a colourless aromatic liquid, obtained from anisic acid.

Anisuric acid. [Anise, *q.v.*]=$C_{10}H_{10}NO_4$: a crystalline acid substance obtained from anisyl chloride.

Anisyl, (an'is-il). [Anise, *q.v.*]=$C_8H_7O_2$: the radicle of the anisic series, obtained from oil of aniseed.

Ankle joint, (ang'kl-joint). The joint between the leg bones and the tarsus, connecting the foot with the leg.

Ankylosis, (ang-ki-lōs'is). [Gk. *agkylosis*, a stiffening]. The joining of two bones so as to become practically one.

Annatto, (an-nat'to). A pasty colouring matter, used as a yellow dye, obtained from the seeds of Bixa orellana.

Annelida, (an-nel'i-da). [L. *annellus*, little ring.]=Worms: a group of invertebrate animals, mostly aquatic, including the leech, earthworm, forming a division of Annulosa, *q.v.*; also called Annulata: are mostly segmented; possess a nervous system and a circulatory system, but no heart, nor any articulated limbs.

Annelidans, (an-nel'i-dans). [Annelida, *q.v.*] Worm-like animals, known only by fossil tracks. *v.* Invertebrate Lithichnozoa.

Annelidaria, (an-nel-i-dā'ri-a) = Gastrophysaria: De Blainville's term for the group of animals now termed Annelida, *q.v.*

Annellata, (an-nel-lā'ta). [L. *annellatus*, ringed.] Used by Owen for the group of animals now termed Annelida, *q.v.*

Annuals, (an'nu-als). [L. *annus*, year.] Plants

that live but one year=Monocarps: having but one set of seeds.

Annular, (an'nū-lar). [L. *annulus*, ring.] Having the form of a ring. *A. ligament* one round the instep. *A. eclipse:* a solar eclipse in which only the central portion of the sun is hidden, the whole circumference being visible.

Annulata, (an-nū-lā'ta). [L. *annulus*, a ring] =Red-blooded worms: having the body in segments=Annelida, *q.v.*

Annulated columns. Columns, usually in clusters, joined by bands or rings.

Annuloida, (an-nū-loi'da). [Annulosa, *q.v.* and *eidos*, like.] Considered temporarily as a primary division of the animal kingdom: sea-urchins, star-fishes, and entozoa, removed from Annulosa, and made into an independent group by Huxley. Also called Echinozoa: it comprises Echinodermata and Scolecida; invertebrate animals having a nervous system, a closed alimentary canal, and a water-vascular system.

Annulosa, (an-nū-lō'sa). [L. *annulus*, ring] Insects, shrimps, crabs, leeches, &c., all being animals formed of a series of segments or rings = Articulata and Anarthropoda: a primary division of the animal kingdom.

Anoa, (a-no'a). An animal, resembling the antelope, belonging to Ruminantia.

Anode, (an'ōd). [Gk. *ana*, up; *hodos*, a road.] The positive pole, or electrode, of a galvanic battery.

Anodon, (an'o-don). [Gk. *an*, without; *odontes*, teeth.]=Anodonta=Fresh-water mussel: belonging to Lamellibranchiata, the only shell found in Old Red Sandstone in Britain.

Anodontophora, (an-o-don-tof'o-ra). [Gk. *an*, without; *odontes*, teeth; *phero*, I bear.]= Lamellibranchiata: a division of mollusca having no odontophore.

Anodyne, (an'o-dīn). [Gk. *a*, without; *odyne*, pain.]=Soothing medicine.

Anolis, (an'o-lis), a tree lizard=Anolius, *q.v.*

Anolius, (a-nō'li-us). An American reptile, belonging to Iguanidæ.

Anomalistic, (a-nom-a-lis'tik). [Anomaly, *q.v.*]=Anomalous, irregular. *A. year*, 365 days, 6 hours, 13 min., 49·3 sec., the time between two consecutive passages of the sun through the aphelion or perihelion point. *A. month*, 27 days 13 hours, 18 min., 37·40 sec., the time between two consecutive passages of the moon through any given point in her orbit.

Anomalous, (an-om'al-us). [Anomaly, *q.v.*] Irregular: not according to the ordinary law.

Anomaly, (an-om'a-li). [Gk. *a*, not; *homalos*, equal.] In astronomy, the angular distance of a star from its perihelion. *True A.*= Distance of a star or comet from perihelion. *Mean A.*=Estimated distance, assuming a mean velocity.

Anomodontia, (a-nom-o-don'shi-a). [Gk. *anomos*, irregular; *odontes*, teeth.] A group of reptiles, including the Dicynodon and Cryptodon, in which the teeth, if there be any, are abnormal: known only by fossil remains; found in Triassic rocks.

Anomopteris, (an-o-mop'ter-is). [Gk. *anomos*, irregular; *pteris*, fern.] Ferns with unusually large leaves, known only by fossil remains found in New Red Sandstone rocks.

Anomura, (a-no-mū'ra). [Gk. *anomos*, irregular; *oura*, tail.] Crustaceans, intermediate between Brachyura and Macrura, characterised by irregular tail. Ex. The hermit crab.

Anona, (an-ō'na). [Said to be a corruption of L. *aliment*, nourishment.]=Custard apple, &c.: the type of Anonaceæ, *q.v.*

Anonaceæ, (a-no-nā'se-ē). [Anona, *q.v.*]= Anonads=Anonæ: custard-apple, &c., evergreen exogenous plants, chiefly tropical and often fragrant; trees and shrubs with axillary flowers having leathery petals; belong to Ranales.

Anophytes, (a-nof'i-tēz). A division of cryptogamous plants, consisting of cellular tissue only.

Anoplophora, (an-o-plof'o-ra). [Gk. *a*, not; *hoplon*, weapon; *phero*, I bear.] An insect, having no sting.

Anoplotheria, (an-o-plo-thē'ri-a). [Gk. *a*, not; *hoplon*, arm; *therion*, beast.] Fossil pachydermatous quadrupeds, resembling the rhinoceros, but having no tusks, horns, or trunk; found in Lower Miocene and Upper Eocene strata: the most ancient form of Paridigitata, intermediate between the present Pachydermata and Ruminantia.

Anoplotherium, (an-o-plo-thē'ri-um), singular of Anoplotheria, *q.v.*

Anoplura, (an-o-plū'ra). [Gk. *anoplos*, unarmed; *oura*, tail.]=Lice: parasitic insects, belonging to Aptera.

Anorthic crystals, (a-north'ik). [Gk. *a*, not; *orthos*, upright] Crystals in which no two of the axes are at right angles.

Anorthite, (an-or'thīt). [Gk. *a*, not; *orthos*, upright.]=Lime felspar: a mineral of the felspar group, in which the cleavages are not at right angles. Cf. Orthoclase.

Anorthoscope, (an-orth'o-skōp). [Gk. *anorthoo*, I set straight; *skopeo*, I see.] An instrument by which distorted images are made to appear correct.

Anosteozoaria, (a-nos-te-ō-zō-ā'ri-a). [Gk. *a*, not; *osteon*, bone; *zoon*, animal.] Used by De Blainville for animals having articulated forms, but no bones, such as insects, Crustaceans, Myriapoda, &c.

Anoura=Anura, *q.v.*

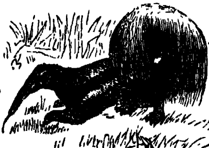
Anourous, (a-nū'rus). [Gk. *a*, without; *oura*, tail.]=Tailless.

Ansæ, (an'sē). [L. *ansæ*, handles.] The parts of Saturn's ring that are visible on each side of the disc, and have the appearance of handles.

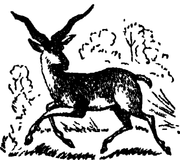
Anser, (an'ser). [L. *anser*, goose; from *gha*, to open the mouth.]=Goose: an aquatic bird, belonging to Natatores.

Ant, (ant). [Contraction of *emmet*, the Anglo-Saxon name.]=Formica: a small insect belonging to Hymenoptera, living in communities, in nests called ant hills, as bees do in bee hives; probably the most intelligent of all animals, excepting man, having larger cerebral ganglia than any other insect.

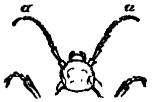
Ant-bear, (ant'bār)=Myrmecophaga jubata=Great ant-eater: an animal belonging to Edentata, living chiefly on ants.
Ant-lion, (ant'lī-on)=Myrmeleo: A large burrowing insect belonging to Neuroptera, feeding on ants and other insects.
Antacid, (ant'as-id). [Gk. *anti*, against; acid, *q.v.*] Having properties contrary to those of an acid.
Antæ, (an'tē). [The L. word] 1. Piers formed by the ends of the side walls of a building, when they are prolonged beyond the end walls. 2. Pilasters opposite columns.
Antagonistic actions, (an-tag-on-ist'ik). [Gk. *anti*, against; *agonizomai*, I contend.] Opposed to each other, as the actions of morphia and quinia, atropia and muscaria, &c.
Antarctic, (an-tark'tic). [Gk. *anti*, against; *arktos*, north.] Relating to the south. *Antarctic circle*: 23½° round the south pole.
Antares, (an-tā'rez). [The Arabic name.]=α Scorpii, a red star of first magnitude, sometimes called the Scorpion's Heart.
Ant-eater, (ant'ēt-er). A quadruped whose chief food is ants and other insects. *Cape A.*=Orycteropus capensis. *Great A.*=Myrmecophaga jubata. *Short-tailed A.*=Manis pendactyla.


Ant-eater.

Antecian, (an-tē'-si-an). [Gk. *anti*, against; *oikeo*, I dwell.] On the same meridian, but on opposite sides of the equator, and equi-distant from it.
Antedon, (an'te-don)=Feather star=Comatula, *q.v.*
Antefixæ, (an-ti-fik'sē). [L. *ante*, before; *fingo*, I fix.] Upright ornamented blocks, at intervals, on a cornice.
Antelope, (ant'e-lōp). [Gk. *anthos*, splendour; *opsis*, eye.] = Antilope: a graceful quadruped resembling both the deer and the goat, having hollow horns and especially bright eyes; belongs to Ruminantia.


Antelope.

Antemural, (an-te-mū'ral). [L. *ante*, before; *murus*, wall.] The outer wall of any large group of buildings: an outwork.
Antennæ, (an-ten'nē). [L. *antenna*, sail yard of a ship.] 1. Small horn-like organs on the heads of insects and crustacea, serving as organs of touch, or of smelling, or both. 2. An order of Annelida.



a a, Antennæ.

Antennaria, (an-ten-nā'-ri-a). [Antennæ, resemblance to.] 1. A group of plants, such as the cat's-foot, belonging to Asteraceæ. 2. A fungus belonging to Physomycetes.
Antennules, (an-ten'nūlz). [Antennæ, *q.v.*] Small antennæ.
Anthelia, (ant-hē'lia). [Gk. *anti*, against; *helios*, sun.]=Mock-suns; circles opposite the sun.
Anthemideæ, (an-the-mid'e-ē). [Anthemis, *q.v.*] A sub-division of Compositæ, including the chamomile, tansy, and corn marigold; also considered as a sub-division of Asteraceæ.
Anthelmintic, (an-thel-min'tik). [Gk. *anti*, against; *helmins*, a worm.] Any substance destructive of worms.
Anthemis, (an'the-mis). [Gk. *anthemis*, flowery: from its many flowers.] Herbs, including the chamomile and stinking May-weed, belonging to Asteraceæ.
Anther, (an'ther). [Gk. *anthos*, flower.] The termination or head of a stamen, *q.v.*, containing the pollen.
Antheridia, (an-ther-id'i-a). [Anther, *q.v.*, and *eidos*, form.]=False anthers: organs in flowerless plants containing the spermatozoids.
Antherozoa, (an-ther-o-zō'a). [Gk. *anthos*, flower; *zoa*, animals]=Flower animals=Anthozoa, *q.v.*
Antherozoids, (an-ther-o-zō'idz). [Gk. *anthos*, flower; *zoon*, animal; *eidos*, form.] Animals resembling Anthozoa, *q.v.*
Anthocarpous, (an-thō-kar'pus). [Gk. *anthos*, flower; *karpos*, fruit.] Fruits such as the pine-apple and fir-cone.
Antholites, (anth'o-līts). [Gk. *anthos*, flower; *lithos*, stone.] Fossil impressions made by flowers.
Antholithes, (an-tho-līth'ēz).=Antholites, *q.v.*
Anthology, (an-thol'o-ji). [Gk. *anthos*, flower; *logos*, discourse.] A general description of flowers.
Anthony's nut. [S. Anthony, the patron saint of pigs.]=Pig-nut=Bunium flexuosum.
Anthony's rape=Anthony's turnip=Ranunculus bulbosus: tubers eaten by pigs.
Anthophora, (an-thof'or-a). A bee.
Anthophore, (an'tho-for). [Gk. *anthos*, flower; *phero*, I bear.] A small stalk supporting a petal.
Anthophoridæ, (an-tho-for'i-dē). [Gk. *anthos*, flower; *phora*, bearing.] Used by Van Beneden, for a sub-division of Medusæ, *q.v.*
Anthophyllite, (an-thof'il-it). [Anthrophyllum=Clove.] A mineral: a variety of hornblende, resembling the clove in colour.
Anthophyllum, (an-thof'il-lum). [Gk. *anthos*, flower; *phyllon*, leaf.] A fossil coral in Miocene strata.
Anthospermeæ, (an-tho-sper'me-ē). [Gk. *anthos*, flower; *sperma*, seed.] Plants belonging to Cinchonaceæ.
Anthoxanthine, (an-thok-san'thīn). [Gk. *anthos*, flower; *xanthos*, yellow.] Yellow colouring matter in plants.
Anthoxanthum, (an-thok-santh'um)=Vernal grass: a plant belonging to Graminaceæ.
Anthozoa, (an-tho-zō'a). [Gk. *anthos*, flower; *zoon*, animal.] = Actinozoa, *q.v.* = Coral polypes=Zoophyta: a class of Cœlenterati, sometimes called animal flowers, from their resemblance to flowers.

Anthracene, (an'thra-sēn). [Gk. *anthrax*, live coal.] = Paranaphthalin = $C_{14}H_{10}$: a white crystalline hydrocarbon obtained from coal tar.

Anthracite coal, (an'thra-sīt). [Gk. *anthrax*, coal.] = Stone coal = Culm = Blind coal=Glance coal: a hard shining variety of coal, which burns without much flame or smoke, owing to the small quantity of bitumen, composed chiefly of carbon

Anthraconite, (an-thra'ko-nīt). [Gk. *anthrax*, coal.]=Black marble.

Anthracosaurus, (an-thra-ko-saw'rus). [Gk. *anthrax*, coal, *saurus*, lizard.] A large lizard-like reptile, known only by fossil remains found in coal.

Anthracosiæ, (an-thra-kō'si-ē). [Gk. *anthrax*, coal.] Bivalve shells found in or near coal.

Anthracotherium, (an-thra-ko-thē'ri-um). Gk. *anthrax*, coal; *therion*, beast.] A pachydermatous animal, known only by fossil remains found in coal.

Anthraflavic acid, (an-thra-fla'vik)=$C_{15}H_{10}O_4$ =Monoxyanthraquinone.

Anthrakerpeton, (an-thra-ker'pe-ton). [Gk. *anthrax*, coal; *herpeton*, lizard.] A small air-breathing reptile, known only by fossil remains found in coal-fields.

Anthropography, (an-thrō-pog'ra-fi). [Gk *anthropos*, man, *grapho*, I write.] The account of the distribution, customs, and manners of men.

Anthropoid, (an'thrō-poid or an-thrō'poid). [Gk. *anthropos*, man; *eidos*, form.] Applied to those apes, such as the Siamang Gibbon, which approximate most nearly to the human form.

Anthropolite, (an-thrōp'o-līte). [Gk *anthropos*, man; *lithos*, stone] A term used to express any petrified human remains.

Anthropology, (an-thrō-po'lo-ji). [Gk. *anthropos*, man; *logos*, discourse] The science of man: the natural history of the human species.

Anthropomorphous, (an-thrō-po-mor'fus). [Gk. *anthropos*, man; *morphe*, shape.] Having the form of man.

Anthropomorphous apes = Anthropoid apes: gorilla, chimpanzee, and orang. Hylobates is sometimes considered to belong to this group.

Anthropophagous, (an-thrō-pof'a-gus). [Gk. *anthropos*, man; *phago*, I eat.] Cannibal.

Anthropotomy, (an-thrō-pot'o-mi). [Gk. *anthropos*, man; *temnein*, to cut.]=Anatomy confined to the human body; the study of man's anatomy.

Anthyllis,(an'thil-lis.)=Kidney-vetch; an herb belonging to Fabaceæ.

Antiarin, (an-tī'ar-in)=$C_{14}H_{20}O_5+2H_2O$: a poison obtained from the upas tree=Antiaris, *q.v.*

Antiaris, (an-tī'ar-is). [Antjar, the native name.] A genus of Artocarpaceæ, including the poisonous upas tree and sack tree, found in Java.

Antibrachium, (an-ti-brak'i-um). [The Latin name.] The fore-arm of the higher vertebrata=Ulna and radius.

Anticlinal, (an-ti-klī'nal). [Gk. *anti*, against; *klinein*, to bend.) Sloping away in different directions. *A. curve:* formed by strata that curve concavely downwards. *A. line:* the line from which strata slopes: a vertical line passing through the middle of an anticlinal curve: cf. synclinal.

Antichthones, (an-tik'thōnz). People living far apart on the same latitudes.

Antidesmeæ, (an-ti-des'me-ē) = Stilaginaceæ, *q.v.*

Antihelix, (an-ti'he-liks). [Gk; *anti*, against; *helix*, margin of ear.] The elevation within the outer border of the external ear in man:

Antilogous pole, in a crystal which is being electrified by heat that end which is negative, and afterwards when cooling, positive.

Antilope, (an'ti-lōp)=Antelope, *q.v.*

Antimoniates, (an-ti-mō'ni-ātes). [Antimony, *q.v.*] Compounds of antimonic acid with the metals of the alkalies. Ex. Potassic antimoniate.

Antimonic acid, (an-ti-mō'nik). [Antimony, *q.v.*]=now called antimonic anhydride, *q.v.*

Antimonious acid, (an-ti-mō'ni-us) [Antimony, *q.v.*]. Now called antimonious antimoniate=Sb_2O_4: a compound obtained from antimonic anhydride, which possesses no acid properties.

Antimonite, (an'tim-o-nīt). [Antimony, *q.v.*] A mineral of the antimony group: the chief ore of antimony.

Antimoniuretted hydrogen, (an-ti-mō-ni-ū-ret'ted)=H_3Sb: an inflammable gas obtained from dissolving antimony in sulphuric acid.

Antimony, (ant'i-mo-ni). [Antimonium, the Latin name.]=Sb'''=Stibium: a brittle crystalline metal, in great use as a constituent of Britannia metal, type metal, pewter, &c: one of the phosphorus group. *A. glance*, an ore of antimony. *A. group*=Antimonite, Jamesonite, &c: soft and easily fusible minerals, which colour the blowpipe flame green, and contains antimony as a chief constituent.

Antinous, (an-tin'o-us). [Classical.] A part of the constellation Aquila, *q.v.*

Antipathidæ, (an-ti-path'i-dē). A division of Zoantharia sclerobasica, *q v.*

Antiphlogistic, (an-ti-flō-jis'tik). [Gk. *anti*, against; *phlogizo*, I burn.] Preventing, or tending to prevent, consumption by burning.

Antipodes, (an-tip'o-dēz). [Gk. *anti*, against; *podes*, feet] Inhabitants of opposite sides of the globe.

Antirrhineæ, (an-tir-hī'ne-ē). [Antirrhinum, *q.v.*] 1. A sub-division of Scrophulariaceæ, includes toadflax and snapdragon. 2. Also used, by De Candolle, as=Scrophulariaceæ.

Antirrhinum, (an-tir-hī'num). [Gk. *anti*, against, *rhin*, snout. Form of flower.]=Snapdragon: an herb belonging to Scrophulariaceæ.

Antiscii, (an-tis'si-ī). [Gk. *anti*, against; *skia*, shadow.]=Antiscians: people living on different sides of the equator, so that their shadows are, at noontide, in opposite directions.

Antium, (an'ti-um). The porch to a southern door; that to a northern door being a portium.

Antiseptic, (an-ti-sep'tik). [Gk. *anti*, against; *septos*, putrid.] Preventing putrefaction.

Antjar, (an'ti-ar). [The native name.] A poison extracted from Antiaris toxicaria.

Antlers, (ant'lerz.) [*Andouiller*, the French word.] The horns of Cervidæ or deer: properly confined to the branches.

Antlia, (ant'li-a). [L. *antlia*, pump.] Spiral proboscis of butterflies, &c., used to suck up honey, &c., from flowers.

Antlia pneumatica=The Air-pump: a southern constellation.

Antœci, (an-tē'si)=Antiscii, *q.v.*

Antozone, (an'to-zōn). [L. *anti*, against; Ozone, *q v.*] Probably=peroxide of hydrogen: used by Schonbein to express a theoretical condition of oxygen, opposed to ozone.

Antrum Highmori, (an'trum hi-mō'ri). [L. *antrum*, cave; Highmori, of Highmoor.]=Cave of Highmoor: a large cavity in the body of the maxillary bone.

Antwerp Crag=Black Crag: rocks found near Antwerp, and corresponding to Red Crag of Suffolk.

Anura, (a-nū'ra). [Gr. *an*, without; *oura*, tail.] =Frogs, toads, &c.=Theriomorpha: a division of Amphibia, the adults of which have no tail. The term Batrachia is sometimes limited to this group.

Anus, (a'nus). [The Latin name.] The terminal aperture of the intestines.

Aorta, (ā-or'ta). [*Aorte*, the Greek word.] The great artery, or chief vessel, conveying blood from the heart, and subdividing into the iliac arteries.

Aortic arch, (a-or'tik). [Aorta, *q.v.*] The bend of the aorta.

Apara, (ap'ar-a). [The native name.]=Mataco =Dasypus 3 cinctus=3 banded armadillo= Tolypeutes conurus. *v.* Armadillo.

Apathetic, (ap-a-thet'ik). [Gk. *a*, not; *pathetikos*, sensitive.] Without highly developed senses. *A. animals:* term used by Lamark to describe Infusoria, Polyps, Tunicata, &c.

Apatite, (ap'a-tīt). [Gk. *apate*, deception.]= Phosphorite: chiefly phosphate of lime; a variously-coloured mineral found in Cornwall.

Apatite group. Apatite, francolite, phosphorite, &c.

Apes, (āps). [*Apa*, the early English name.] =Pithecus: tailless monkeys: those approximating most nearly to man. *Anthropoid A.*: chimpanzee, gorilla, &c.


Ape.

Apetalæ, (a-pet'a-lē). [Gk. *a*, not; Petal, *q.v.*]=Incompletæ: plants the flowers of which have no corolla, and often no calyx=Monochlamydeæ+Achlamydeæ.

Apetalous, (a-pet'al-us). [Gk. *a*, not; Petal, *q.v.*] Having no corolla.

Aphanapteryx, (a-fan-ap'ter-iks). [Gk. *aphanes*, obscure; *pteryx*, wing.] A genus of wingless birds, of large size, recently become extinct. *A. brackii*=Dodo.

Aphaniptera, (a-fan-ip'ter-a). [Gk. *aphanos*, hidden; *pteron*, wing.] Insects whose wings are not developed. Ex. Flea.

Aphanite, (af'an-īt). [Gk. *aphanes*, obscure.] A variety of dolerite, in which several minerals are so mingled as to be with difficulty distinguished.

Aphelion, (a-fē'li-on). [Gk. *apo*, from; *helios*, sun.] That point in a planet's orbit which is the most remote from the sun.

Aphides, (af'i-dēz). [The Latin name.]= Plant-lice: insects belonging to Hemiptera.

Aphis, (ā'fis). Singular of Aphides, *q.v.*

Aphis-lion=Hemerobius, *q.v.*

Aphlogistic, (a-flō-jist'ik). [Gk. *a*, not; *phlogizo*, I flame.] Without flame.

Aphroditaceæ, (af-rō-dit-ā'se-ē). [Aphrodite, *q.v.*]=Sea-mice: worm-like animals belonging to Errantia, a sub-division of Annelida.

Aphrodite, (af-rō-dī'te). [Classical.] = Sea-mouse: the type of Aphroditaceæ, *q.v.*

Aphyllæ, (a-fil'lē). [Gk. *a*, not; *phyllon*, leaf.] Plants having no leaves, and no apparent sexual characters=Thallogens.

Aphyllous, (a-fil'lus). [Gk. *a*, without; *phyllon*, leaf.]=Leafless.

Apiaceæ, (a-pi-ā'se-ē). [L. *apium*, parsley.]= Umbellifers: herbs, often milky, with polypetalous flowers in umbels, belonging to Umbellales.

Apiocrinidæ, (a-pi-o-krin'id-ē). [Apiocrinite, *q.v.*] Animals belonging to Crinoidea, *q.v.*, supposed to be extinct, until one was found in 300 fathoms of sea, near Norway, in 1866.

Apiocrinite, (ap-i-o-krī'nīt). [Gk. *apion*, pear; *krinon*, lily.]=Pear-lily: an echinoderm, belonging to Crinoidea, *q.v.*, somewhat pear-shaped; known only by fossil remains.

Apium, (ā'pi-um). [The Latin name.]=Celery, an herb belonging to Apiaceæ.

Aplacental, (a-pla-sent'al). [Gk. *a*, without; Placenta, *q.v.*]=Aplacentalia: used of animals belonging to Mammalia that have no placenta=Monotremata and Marsupiala.

Aplacentaria, (a-pla-sent-ā'ri-a). [Gk. *a*, without; Placenta, *q.v.*]=Aplacental, *q.v.*

Aplanatic, (a-plan-at'ik). [Gk. *a*, not; *planaomai*, I wander.] Corrective of spherical aberration: used of lenses which collect rays into one focus.

Aplectrum=Ribless=Plectognathi, *q.v.*

Aplosporeæ=Fucaceæ, *q.v.*

Aplysiæ, (a-plī'si-ē). [Gk. *a*, not; *plyno*, I clean.]=Sea-hares: molluscous animals whose tentacles resemble the ears of a hare.

Apocarpæ, (a-po-kar'pē). [Gk. *apo*, from; *karpos*, fruit.] Plants in which the carpels are distinct from each other, including Rosales, Saxales, &c.

Apocarpous plants, (a-po-kar'pus)=Apocarpæ, *q.v.*

Apocineæ, (a-po-sī'ne-ē)=Dog-worts=Apocynaceæ, *q.v.*

Apocrenic acid, (a-po-krē'nik). [Gk. *apo*, from; *krene*, spring.] = $C_{24}H_{14}O_{13}$: an acid substance found in some mineral springs.

Apocynaceæ, (a-po-sin-ā'se-ē). [Gk. *apo*, from; *kyon*, dog.]=Dogbanes: shrubs and trees,

chiefly tropical; usually milky, and often poisonous, with large showy flowers and opposite leaves: belonging to Gentianales.

Apoda, (ap'o-da). [Gk. *a*, not; *podes*, feet.] =Apodes: used for animals having no feet: 1, by Aristotle for Cetacea; 2, by Vogt for a sub-division of Reptiles; 3, by Lamarck for a sub-division of Annelida; 4, by Cuvier for such fishes as the eel, which have no ventral fin.

Apodemata, (a-po-dē'ma-ta). [Gk. *apo*, from; *daio*, I divide.] Septa dividing the tissues in Crustacea.

Apodes, (ap'o-dēz)=Apoda, *q.v.*

Apogee, (ap'o-jē). [Gk. *apo*, from; *ge*, earth.] That point in the orbit of a planet which is farthest from the earth.

Apoglucic acid, (ap-o-glū'sik). [Gk. *apo*, from; Glucose, *q.v.*]=$C_9H_{11}O_5$: an acid substance obtained from glucic acid.

Apomorphia, (a-po-mor'fi-a). [Gk. *apŏ*, from; Morphia, *q.v.*]=$C_{17}H_{17}NO$=Morphia$-H_2O$: a base obtained from morphia: a powerful emetic; also called Apomorphine.

Apomorphine, (a-po-mor'fin). [Gk. *apo*, from, Morphine, *q.v.*]=Morphine$-H_2O$=$C_{17}H_{17}NO_2$: obtained from morphine=Apomorphia, *q.v.*

Aponeuroses, (a-pon-ū-rō'ses). [Gk. *apo*, apart; *neuron*, sinew.] Membranes separating the muscles.

Apophyge, (a-po'fi-ge). [Gk. *apo*, from; *phyge*, flight.] A concave moulding connecting the shaft of a column with the base and with the capital: also called an *escape*.

Apophyllite, (a-po-fil'īt). [Gk. *apo*, from; *phyllon*, leaf.]=Ichthyophthalmite=Fish-eye stone: a mineral, chiefly silicate of lime, which readily breaks up into leaf-like scales.

Apophysis, (a-po'fis-is). [Gk. *apophysis*, a branch.] 1=Apophyge: the part at the top or bottom of a fillet, where it springs out to meet the fillet. 2 Any prominence on the surface of a bone, or flower stalk, &c.

Aporosa, (a-po-rō'sa). [Gk. *aporos*, not open.] A division of Zoantharia sclerodermata.

Apostasiaceæ, (ap-os-ta-si-ā'sc-ē). [Gk. *apostasia*, separation.]=Apostasiads: herbaceous plants with thin sheathing leaves, resembling orchids: chiefly tropical.

Apparatus sculptoris, (ap-pa-rā'tus skulp-tō'-ris). [The Latin name.]=The Sculptor's Workshop: a southern constellation.

Appendicular, (ap-pen-dik'ū-lar). [L. *ad*, to; *pendo*, I hang.]=Appended; subordinate to a central body. *A. skeleton*=The skeleton of the limbs. *A. muscles*=Muscles belonging to the limbs.

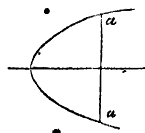
Appendiculata, (ap-pen-dik-ū-lā'ta). [L. *ad*, to; *pendo*, I hang.] A sub-division of Infusoria; fringed with small appendages.

Apple, (ap'pl). [*Aepl*, the A.-S. name.] Formerly applied to any rounded fruit: now restricted to the fruit of the cultivated varieties of Pyrus Malus. *Devil's A.*=Mandrake; *Thorn A.*=Datura stramonium. *Wild A.*=Crab apple=Pyrus Malus, L. *Love A.*=Solanum persicum. *A. of the eye*=Pupil of the eye. *A. oil*=C_5H_{11}, $C_5H_9O_2$=Alcoholic solution of amyl valerate, having an apple-like flavour.

Apple-weevil=Anthonomus pomorum, an insect belonging to Rhynchophora.

Apple-worts, (ap'pl wurts). [Apple and worts, *q.v.*]=Pomaceæ, *q.v.*

Applicate ordinate, (ap'pli-kāt)=Double ordinate: a straight line crossing the axis of a conic section at right angles, and reaching from side to side, bisected by the diameter.



a a Applicate ordinate.

Apricot, (ā'pri-kot). [F. *abricot*, from; L *præcocia*, early.]=Prunus armeniaca: a plant with a plum-like fruit, named from the supposition of its being an early peach.

Apricot-weevil=Otiorhynchus tenebricosus: an insect belonging to Rhynchophora.

Apron, (ā'pron). 1 A platform of plank at the entrance of a lock, on which the gates shut. 2 Timbers connecting the stem and keel of a ship.

Apron-piece. Timbers fixed in the wall to support the landings of a staircase.

Apse, (aps). [Gk. *apsis*, arch.] The portion of a building which has a circular or polygonal termination, such as the eastern, or altar end of a church; also called apsis

Apsides, (ap'si-dēs). [Gk. *apsis*, arch] Plural of apsis: the two points in the orbit of a planet that are respectively nearest and most distant from the sun. *Lower A.*=Perihelion. *Upper A.*=Aphelion.

Apsis, (ap'sis). [Gk. *apsis*, arch.] 1. Singular of apsides, *q.v.* 2=Apse, *q.v.*

Aptera, (ap'ter-a). [Gk. *apteros*, without wings] Applied to insects that have no wings.

Apteral, (ap'tẹr-al). [Gk. *a*, without; *pteron*, wing.]=Apterous, *q.v.*: used of a building that has columns in front, but none at the sides.

Apterous, (ap'tẹr-us). [Gk. *a*, without; *pteron*, wing.]=Wingless.

Apteryx, (ap'ter-iks). [Gk. *a*, without; *pteryx*, wing.]=Kiwi: a nocturnal insectivorous bird of the ostrich kind, very rare, in N. Zealand, having the wings almost entirely abortive.

Aptotic, (ap-tō'tik). [Gk. *a*, without; *ptosis*, case.] Used of languages in which the nouns do not express variety of case by variety of spelling.

Apus, (a'pus). [Gk. *a*, without, *pous*, foot] =The Bird of Paradise: a southern constellation, named from the belief that the bird of paradise had no feet.

Aqua, (ak'wa). [The Latin word.]=Water.

Aqua-fortis, (ak-wa-for t'is). [L. *aqua*, water; *fortis*, strong]=Nitric acid, *q.v.*

Aqua-marine, (ak-wa-ma-rēn'). A less brilliant variety of emerald and beryl.

Aqua-regia, (ak-wa-rē'ji-a). [L. *aqua*, water; *regia*, royal.]=Nitro-muriatic acid=Nitro-hydrochloric acid: a mixture of nitric and hydrochloric acids, which will dissolve gold and platinum

Aquarium, (ak-wā'ri-um)=Aquavivarium.

Aquarius, (a-kwā'ri-us). [The Latin name.]= The Water-bearer: the sign of the Zodiac in which the sun is from Jan. 20 to Feb. 20: one of the Zodiacal constellations.


Aquarius.

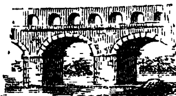
Aquatic (a-kwat'ik). [L. *aqua*, water.] Inhabiting water.

Aquatic respiration, (a-kwat'ik). [L. *aqua*, water.] By means of gills or branchiæ, which absorb oxygen from the air present in water. *Sub-A. nests*, built by sticklebacks, water spiders, caddis flies, &c.

Aquatinta, (ak-wa-tin'ta). [It. *acqua*, water; *tinta*, tinted.] Etching on copper by means of aqua-fortis.

Aquavivarium, (ak-wa-vī-vā'ri-um). [L. *aqua*, water; *vivo*, I live.]=Aquarium: an enclosed space filled with water, in which animals and plants live in their accustomed manner.

Aqueduct, (ak'we-dukt). [L. *aqua*, water; *ductus*, led.] An artificial water-course


Aqueduct.

Aqueous, (ā'kwe-us). [L. *aqua*, water.]= Watery. *A. formations*=Fossiliferous formations = Sedimentary formations=Stratified rocks: covering the greater part of the earth's surface, chiefly deposits of sand and mud, spread out by the action of water: may be divided into silicious, argillaceous, and calcareous. *A. humour:* a watery liquid in the eye.

Aquifoliaceæ, (ak-wi-fō-li-ā'se-ē). [L. *aquifolium*, pointed leaf.]=Holly, &c.: evergreen trees and shrubs, with small axillary flowers: also called Ilicineæ.

Aquila, (ak'wil-a). [The Latin name.]=Eagle. 1. A large bird of prey, belonging to Accipitres. 2. A northern constellation: in which Antinous is now included. The chief stars are Altair and Alshain.

Aquilariaceæ, (ak-wi-la-ri-ā'se-ē). [L. *aquila*, eagle.]=Aquilariads: trees with apetalous flowers, having a tubular calyx, in tropical Asia only, including eagle wood and aloes, belonging to Rhamnales.

Aquilarineæ, (ak-wi-la-rin'e-ē)=Aquilariaceæ, *q.v.*

Aquilegia, (ak-wi-lē'ji-a). [L. *aquila*, eagle: from form of flower.] =Columbine = Water-gatherer: an herb with leaves that catch water, belonging to Ranunculaceæ.

Ara, (ā'ra). [The Latin name.]=The Altar: a southern constellation.

Arabian architecture = Arabesque A. = Moresque A. =Saracenic A.: ornamented with representations of fruit and flowers, but not of animals.


Arabesque.

Arabideæ, (a-ra-bid'e-ē). [Arabis, *q.v.*]= Stocks, wallflower, cress, &c.: a sub-division of Cruciferæ, *q.v.*

Arabin, (ar'a-bin). [From Arabia.]=Gum Arabic, found in all plants, but especially in acacia: a compound of gummic acid with sodium and potassium.

Arabis, (a'ra-bis). [From Arabia.] Rock-cress: an herb with white flower, belonging to Brassicaceæ.

Araceæ, (a-rā'se-ē). [Arum, *q.v.*]=Aroideæ= Arads: tropical herbs and shrubs, sometimes stemless, with sheathing leaves, and naked flowers, the type of Arales.

Arachidic acid, (a-rak'id-ik). [*Arachis*, ground-nut.]=Butic acid=$C_{20}H_{40}O_2$, from Arachis hypogæa, from butter, and from oil of ground-nut. One of the fatty acids.

Arachnida, (ar-ak'ni-da). [Gk. *arachnes*, spider; *eidos*, form.] = Spiders, scorpions, mites: spider-like animals, mostly carnivorous, forming a sub-division of Arthropoda: the body of each is divided into segments, having articulated appendages; they breathe by means of pulmonary sacs or simple lungs.

Arachnoda, (ar-ak'no-da). [Gk. *arachnes*, spider, *eidos*, form.] Used by Burmeister to include Myriapoda and Arachnidæ.

Arachnodermaria, (a-rak-nō-der-mā'ri-a). [Gk. *arachnes*, spider; *derma*, skin.] Used by De Blainville for Acalephæ.

Arachnoid, (a-rak'noid). [Gk. *arachne*, spider's web; *eidos*, form.] 1. A very thin membraneous covering to the brain. 2. One of the coats of the eye. 3. A fossil coral.

Arads=Araceæ, *q.v.*

Aræometer, (a-rē-om'e-ter). [Gk. *araios*, thin; *metron*, measure.] A variety of hydrometer used to find the specific gravity of any fluid or solid; but especially adapted to fluids less dense than water.

Aragonite=Arragonite, *q.v.*

Arales, (a-rā'lēz). [Araceæ, *q.v.*] The lowest flowering plants: with naked or petaloid flowers=Duckweeds, bulrushes, &c., forming a division of Endogens.

Araliaceæ, (a-rā-li-ā'se-ē). [Aralia, *q.v.*]=Ivy-worts: herbs, shrubs, and trees: with green pentamerous flowers, and many-celled fruits, including the ivy and ginseng.

Aralia, (a-rā'li-a)=Ivy.

Araliæ, (a-rā'li-ē). [Aralia, *q.v.*] Ivy-worts =Araliaceæ, Ld.

Araneida, (ar-ā-nī'da). [L. *araneus*, spider.] =Spiders: a division of Arachnida, *q.v.*

Araneiform, (a-rā'ni-form). [L. *araneus*, spider; *forma*, form.]=Spider-like.

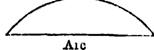
Arar tree, (ār'ar). Of Barbary=Sandarach tree; the gum of which is sandarach.

Araucanians, (a-raw-kā'ni-ans). A S. American race.

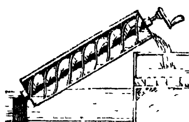
Araucaria, (a-raw-kā'ri-a). [Araucania, in S. America.] A pine-like tree of very large size, found in Australia.

Araucarites, (a-raw-ka-rī'tēz). [Araucaria.] Fossil remains of trees resembling the living Araucariæ, found in Secondary rocks.

Arbor, (ar'bor)=Axle, when small, as in a watch.
Arbor Dianæ, (ar'bor di-a'nē). [L. *arbor*, tree; *Dianæ*, of Diana.]=Silver tree, *q.v.*, a tree-like deposit of metallic silver, obtained from a salt of silver.
Arbor saturni, (ar'bor sa-tur'ni)=Lead tree, *q.v.*, analogous to silver tree.
Arbor vitæ, (ar'bor vi'tē). Tree-like ramifications in the brain.
Arborescent, (ar-bo-res'sent). [L. *arbor*, tree; *cresco*, I grow.] Tree-like.
Arboreal monkeys. [L. *arbor*, tree.] Having the hands more or less modified into hooks, with which to grasp the branches, especially in Hylobates and Ateles.
Arbuteæ, (ar-bū'te-ē). [Arbutus, *q.v.*] Includes strawberry tree, bearberry, and plants belonging to Ericaceæ.
Arbutin, (ar'bū-tin). [Arbutus, *q.v.*]=$C_{12}H_{16}O_7$: a crystallised principle found in leaves of bearberry.
Arbutus, (ar'bū-tus). [L. *arbutus*, strawberry tree.] A shrub with white and red flowers, belonging to Arbuteæ, *q.v.* *A. unedo* =Strawberry tree.
Arc, (ark). [L. *arcus*, a bow.] Any part of a simply curved line.


Arc

Arcanite, (ar'ka-nīt). [L. *arcanus*, hidden.] A colourless variety of sulphate of potash.
Arch, (artsh) [*Arc* the French word.] Any structure concave below, supported at the lower extremities, usually supporting a weight, and bridging over a space, as a doorway, window, or the arch of a bridge. *Neural A.*, encloses the spinal chord. *Cranial A.* encloses the brain; *Visceral A.* encloses the stomach, &c.
Archægosaurus, (ar-kē-go-saw'rus). [Gk *archegos*, first or leader; *sauros*, lizard.] A batrachian reptile, known only by fossil remains found in Carboniferous rocks. Properly Archegosaurus.
Archæocidaris, (ar-kē-ō-sid'a-ris) [Gk. *archaios*, ancient; *kidaris*, turban.]=Seed-egg. a turban-shaped sea-urchin, found fossil in Palæozoic rocks.
Archæoniscus, (ar-kē-o-nis'kus). [Gk *archaios*, ancient; *oniscos*, wood-louse.] A crustacean animal, resembling the wood-louse, known by fossil remains in Oolitic rocks.
Archæopteryx, (ar-kē-op'ter-iks). [Gk. *archaios*, ancient; *pteryx*, wing.] An extinct bird: fossil remains of one were found in Upper Oolite strata. *A macrura*, unites reptiles and birds, but not so closely as does the Compsognathus; has a Saurian feathered tail.
Archæotherium, (ar-kē-ō-thē'ri-um). [Gk. *archaios*, ancient; *therion*, beast.] A pachydermous animal known only by fossil remains found in Lower Miocene rocks in Nebraska.
Archal, (art'shal, corruption of orchil)=Orchil=Rocella tinctoria: a lichen, from which a purple colouring matter is obtained.
Archangel, (ark-ān'jel). [Blossoming at St. Michael's day.]=Angelica archangelica: a tree belonging to Labiatæ. *Yellow A.*= Lamium galeobdolon *White A.*=Lamium album. *Red A.*=Stachys sylvatica.
Archebiosis, (ar-ke-bi'o-sis). [Gk. *arche*, beginning; *bios*, life.]=Independent origination of living matter.
Archegosaurus, (ar-ke-go-saw'rus). A batrachian reptile, fossil remains of which are found in coal=Archægosaurus, *q.v.*
Archencephala, (ar-ken-sef'a-la). [Gk. *archos*, chief, *egkephalos*, brain.] Owen's term for man, as being first in mental power.
Archer-fish, (art'sher)=Toxotes: a fish belonging to Squamipennæ, named from its habit of discharging drops of water at insects by means of its tubular mouth.
Archetype, (ar'ke-tip) [Gk. *arche*, beginning; *typos*, pattern.] Original model or type.
Archil, (art'shil). [Corruption of *orchilla*, the Spanish name.] Orchil, a purple dye obtained from lichens, especially from Rocella tinctoria; also called Litmus.
Archimedean Screw, (ar-kim-ē-dē'an). [Archimedes.] A spiral tube wound round an axis: the archetype of the screw-propeller.


Archimedes' Screw.

Archimulacris, (ar-kim-ū-lā'kris). *A. acadicus*: the only American fossil cockroach, known only by a wing.
Architecture, (ar-ki-tek'tūr) [Gk. *archos*, chief, *tekton*, builder.] The science and art of building.
Architrave, (ar'ki-trāv). [Gk. *archos*, chief; L. *trabs*, beam.]=Epistylion. 1. The beam resting upon the columns, and supporting the roof, sometimes represented by an arch; the lower division of an entablature. 2. Moulded lining on the face of jambs.
Archivolt, (ar'ki-volt). [*Archivolto*, the Italian name.] The inner band, or moulding of an arch, if plain=Soffit.
Arciform, (ar'si-form). [L. *arcus*, form; *forma*, shape.] Arch-like.
Arctic, (ark'tik) [*Arktikos*, the Greek word.] Belonging to the north. *A. circle*, extends for 23½° round the N. pole. *A floral region*, marked by firs and berry trees, in Lapland, Sweden, and the Alps. *A. fox*=Vulpes lagopa. *A. miocene beds*, in Iceland, Spitzbergen, &c.: contain fossil beeches, oaks, vines, &c., proving a warmer climate to have once existed there.
Arctisca, (ark-tis'ka.) [Gk. *arktos*, bear.]= Water-bears=Tardigrada: minute animals with a vermiform body and suctorial tube for mouth, forming a division of Arachnida.
Arctocyon, found fossil in Eocene beds: the oldest known placental mammal.
Arctomys, (ark'to-mis). [Gk. *arktos*, bear; *mys*, rat.]=Marmot of the Alps=Mus Alpinus: a small burrowing rodent quadruped.
Arctuvin, (ark-tū'vin). [Gk. *arktos*, bear; *uva*, berry.]=Hydroquinone=$C_6H_6O_2$: a crystal-

line substance found in the leaves of the bearberry.

Arcturus, (ärk-tū'rus). [Gk. *arktos*, bear; *oura*, tail.]=α Boötes. A reddish star of the first magnitude, which is also a sun-star and a parallax-star, in the constellation Boötes, near the tail of the Great Bear.

Ardea, (ar'de-a). [The Latin name.]=Heron: a bird belonging to Grallatores.

Ardeidæ, (är-dī'dē). [Ardea, *q.v.*]=Herons: a family of birds of which the heron is the type.

Ardisiaceæ, (är-dis-i-ā'se-ē). Myrsinaceæ, *q.v.*

Ardisiads, (är-dis'i-adz).=Myrsinaceæ, *q.v.*

Ardwick-limestone, (ärd'wik). [A. near Manchester.] A sub-division of Upper Carboniferous rocks: contains remains of fish and shells.

Are, the unit of land-measure in the French decimal system=100 square metres=119·6 square yards.

Area, (ā're-a). [The Latin word.] A plane surface; also used for the measurement of such a surface.

Areca, (a-rē'ka)=Areca palm: a tree belonging to Palmaceæ. *A. catechu* bears the betel-nut.

Arenaceous foraminifera, (ar-ē-nā'shō-us). Foraminifera having a test, formed entirely of sand-grains in the place of a shell. *A. rocks*=Sandstones, *q.v.*

Arenicolites, (a-rē-ni-kō'lits). [L. *arena*, sand; *colo*, I inhabit: Gk. *lithos*, stone.] Fossil worm burrows found in sandstones.

Arenig, (ar'e-nig)=Stiper stones, the lowest of the Lower Silurian strata.

Areola, (a-re'o-la). [*Areola*, the Latin word.] Any small surface or space: especially used in biology for small interstices and rings.

Areolar tissue (a-re'o-lar). [Areola, *q.v.*]= Connective tissue, *q.v.*

Areometer, (a-rē-om'et-er). [Gk. *araios*, thin; *metron*, measure.] An instrument for the measurement of specific gravity. *v.* Aræometer.

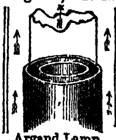
Areometric method, (a-rē-o-met'rik). [Gk. *araios*, thin; *metron*, measure.] Measurement of the specific gravity of a solid body by weighing it in a liquid.

Arethusa, (a-re-thū'sa). [Classical.] One of the Asteroids, No. 95.

Arfvedsonite, (ärf-ved'so-nīt). A mineral belonging to the hornblende group, chiefly silicate of iron.

Argal, (är'gal). 1. A sheep=Ovis argala= Ovis nahool. 2.=Argol, *q.v.*

Argand lamp, (är'gand). [M. Argand, the inventor.] An oil lamp having a tubular wick, and clock-work machinery for pumping up the oil.


Argand Lamp.

Argentic, (är-jen'tik). [L. *argentum*, silver.] Silvery; containing silver: used of the ordinary salts of silver. *v.* Chemical nomenclature.

Argentine, (är-jen'tin). [L. *argentum*, silver.] 1.=Scopelus Humboldtii, *q.v.* 2. A white variety of calcareous spar.

Argentisatin, (är-jen-tis'a-tin). [Argentum and isatin, *q.v.*]=$C_8H_4AgNO_2$: a red amorphous substance obtained from argentic nitrate and isatin.

Argentite, (är-jen'tīt). [L. *argentum*, silver.] =Silver glance: one of the silver group of minerals, chiefly subsulphide of silver; a common ore of silver.

Argentous, (ar-jent'us). [L. *argentum*, silver.] Containing silver, used of the sub-salts. *v.* Chemical nomenclature.

Argentum = Ag′ = Silver: one of the Noble Metals, *q.v.*

Argil, (är-jil). [The French word.]=Pure clay.

Argillaceous, (är-jil-lā'she-us). [F. *argil*, clay.] = Clayey. *A. rocks:* clay rocks: containing alumina.

Argillite, (är'jil-īt). [F. *argil*, clay.] A rock resembling clay-slate, but without its cleavage.

Argol, (är'gol) = Crude tartar=Potassic tartrate=Impure cream of tartar: found in all wine casks.

Argonaut, (är'go-nawt). [Gk. *argo*, Jason's Ship; *nautes*, sailor.]=Paper nautilus: an animal belonging to Cephalopoda, the female only of which has a shell, shaped somewhat like a boat.

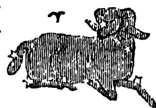
Argo-Navis, (är'go-nā'vis). [L. *navis*, ship.]= The Ship Argo: one of the southern constellations; also called Jason's Ship: sometimes divided into four parts, contains one star of first magnitude, Canopus; also a large nebula. The star η is a very variable star, varying from first to sixth magnitude.

Arguziæ, (ar-gū'zi-ē)=Cordiaceæ, *q.v.*

Ariadne, (a-ri-ad'ne). [Classical.] One of the Asteroids, No. 43.

Aricine, (a'ri-sin)=$C_{23}H_{27}N_2O_4$=Cinchonatine: a white crystalline base found in cinchona bark.

Aries, (a'ri-ēz). [L. *aries*, a ram.]=Ram: the first of the twelve signs of the Zodiac: also one of the constellations of the Zodiac. The point of intersection of the celestial equator and ecliptic is called the first point of Aries, though it is now really in Pisces.


Aries.

Ariel, (ā'ri-el). A satellite of Uranus.

Aril, (ar'il). [F. *arille*, seed coat.] A cup-like covering for seeds, in which only the lower part is covered.

Aristolochia, (ar-is-to-lō'ki-a). [Gk. *aristos*, best; *locheia*, birth.]=Birthwort: an herb or shrub, often twining: named from being used at childbirth, the type of Aristolochiaceæ.

Aristolochiaceæ, (ar-is-tō-lō-ki-ā'se-ē). [Aristolochia, *q.v.*] Herbs and shrubs, with axillary apetalous flowers, belonging to Asarales; resemble endogens in flowers, but exogens in stems and leaves, found chiefly in tropical America, &c.

Aristotle's classification of animals.—Zoa (animals) are divided into Enaima (Vertebrata) and Anaima (Invertebrata). The

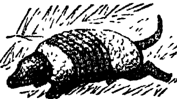
Enaima are divided in Zootoka (Mammalia) and Ootoka (Ovipara). The Zootoka are divided into Dipoda (man), Tetrapoda (quadrupeds), and Apoda (cetacea), and the Ootoka into Pterota (birds), Pholidota (reptiles), and Lepidota (fishes).

Arithmetic, (a-rith'me-tik). [Gk. *arithmeo*, I number.] The science and art of calculation by numbers.

Arithmetical, (a-rith-met'ik-al). [Arithmetic, *q.v.*] Related to the science of arithmetic. *A. mean*, the middle term of three terms in arithmetical progression. *A. progression*, the increase or decrease in a series of numbers when the same number is continually added or subtracted, as 1, 3, 5, 7, &c., or 15, 12, 9, 6, 3, 0.

Arm, (arm). [The A.-S. word.] 1. The anterior limb in man, consisting of the humerus, ulna, radius, and bones of the hand, and accompanying nerves, muscles, &c. 2. The projecting lobes of star-fishes. 3. The tentacles of cuttle-fishes, &c. Often used generally for any processes in invertebrate animals.

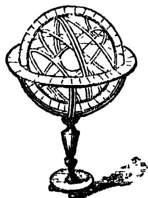
Armadillo, (ár-ma-dil'lo). [Dim. of Sp. *armada*, armed.]=Dasypus: a small burrowing quadruped, found only in America, belonging to Edentata, intermediate between ant-eaters and sloths; having the back and head covered with bony armour plates.


Armadillo.

Armature, (ar'ma-tūr). [L. *armatus*, armed.] 1. A piece of soft iron used to connect the poles of a magnet when not in use. 2. A bobbin of wire used to connect the poles of an electro-magnet, and to convey the current which is generated.

Armeria, (ár-mē'ri-a). [L. *flos armeriæ*, pink.] =Thrift: sea-pink, an herb belonging to Plumbaginaceæ.

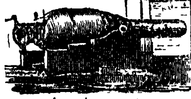
Armillary sphere, (ár'mil-la-ri). [L. *armilla*, bracelet.] A number of rings arranged round a centre, so as to represent a sphere: used to illustrate the relative positions of the ecliptic, equator, &c., of the celestial sphere.


Armillary sphere.

Armoracia, (ar-mō-rā'-si-a)=Nasturtium amphibium; also=Cochlearia armoracia=Horseradish.

Armorican floral region, (ár-mŏ'rik-an). Marked by pastures and orchards, extends through S. England, the Channel Islands, Normandy, and Brittany.

Armstrong gun, (arm'strong). [Sir W. Armstrong the inventor.] A breech-loading rifled gun. *v.* Gun.


Armstrong gun.

Arneb, (ár'neb). [The Arabic name]=α Leporis: the chief star in the constellation Lepus.

Arnoseris, (ár-no-sē'ris). [Gk. *arnos*, lamb; *seris*, succory.]=Lamb's succory=Swine's succory. A small herb belonging to Cichoraceæ.

Arnut, (ár-nut). [D. *aard*, earth; *noot*, nut.] 1=Carum bulbocastanum, *q.v.* 2=Bunium flexuosum, *q.v.*

Arnotto=Annatto, *q.v.*

Aroideæ, (a-roi'de-ē)=Arads: herbs with showy flowers: some epiphytous=Araceæ, *q.v.*

Aromatic, (ar-ō-mat'ik). [L. *aroma*, fragrance.] Fragrant. *A. acids* have the general formula $C_nH_{2n-8}O_2$. *A. alcohols*=Benzoic series. *A. aldehyds:* oil of cumin, oil of cinnamon, &c. *A. hydrocarbons:* Benzol, Toluol, Xylol, Cumol, and Cymol, having the general formula C_nH_{2n-6}.

Arquerite, (ár'ke-rīt). [Arqueros, in Chili.] An amalgam of silver, found in the mine of Arqueros.

Arragonite, (ar-rag'o-nīt). [Arragon in Spain] A mineral, chiefly carbonate of lime.

Arris, (ar'ris) [F. *arete*, corner.]=Edge: used especially for intersections of curved surfaces, as mouldings, &c. *A. fillet:* used to raise the slates of a roof, to throw off rain. *A. gutter:* a raised gutter.

Arrow grasses. [Named from shape of capsules.]=Juncaginaceæ, *q.v.*: plants belonging to Alismales.

Arrow head. [Named from shape of leaves.] =Sagittaria, *q v.*

Arrow-root. A variety of starch obtained from the roots of various tropical plants, and used for food.

Arsenates, (ár'se-nātz). [Arsenic, *q.v.*]=Arseniates, *q v.*

Arseniates, (ar-sen'i-ātz). [Arsenic, *q v.*]= M'_3AsO_4: compounds of arsenic acid with a base.

Arsenic, (ár'sen-ik). [Gk. *arsenikos*, strong.] =Arsenicum, *q.v.* A brilliant brittle metal, very poisonous, which is known only as a solid and as a gas, since when heated it volatilises without melting. *White A.*= Arsenious acid=Oxide of arsenic. *A. anhydride*=A. acid= As_2O_5. *Reinsch's test for A.*, by deposit of A. on pure copper. *Marsh's test for A.*, by combination with nascent hydrogen.

Arsenic group of minerals: Arsenic, orpiment, and realgar, which tinge the blowpipe flame blue.

Arsenicum, (ár-sen'i-kum). [Arsenic, *q.v.*]= As'''=Arsenic: one of the phosphorus group of metals: dark-grey, brittle, lustrous, and very poisonous: used for green and yellow pigments, and in glass-making.

Arsenides, (ár'sen-īdz). [Arsenic, *q.v.*] Compounds of arsenic with a base.

Arsenites, (ár'sen-īts). [Arsenic, *q.v.*] Compounds of arsenious acid and a base.

Arsenious, (ár-sen'i-us). [Arsenic, *q.v.*] Containing arsenic. *A. acid*=*A. anhydride*= As_2O_3.

Arseniuretted, (är-sen-i-u-ret'ted). [Arsenio, *q.v.*] Saturated with arsenic. Ex. *A. Hydrogen*=H_3As.

Arsmart, (är'smart). [Named from causing smarting.]=Polygonum hydropiper.

Artemisia, (är-te-mis'i-a). [*Artemis*, Diana.] =Wormwood: a bitter herb belonging to Anthemideæ. *A. vulgaris*=Mugwort. *A. absinthium*=Wormwood. *A. cotula*=Stinking mayweed.

Arterial blood, (är-tē'ri-al). [Artery, *q v.*] Pure blood, passing from the heart through the arteries to the various parts of the body. *A. system*, the system of arteries, of which the aorta is the chief.

Arterialization, (är-tē-ri-al-iz-ā'shun). [Artery, *q.v.*] The purification of venous blood by the action of oxygen, which fits it for passage through the arteries.

Artery, (är'ter-i). [*arteria*, the Greek name.] One of a number of elastic tubes conveying blood from the heart to the capillaries. *Carotid A.*, belonging to the neck *Pulmonary A.*, belonging to the lungs. *Hepatic A.*, belonging to the liver. *Renal A.*, belonging to the kidneys. *Splenic A.*, belonging to the spleen.

Artesian wells, (är-tē'si-an). [F *Artois*, where they are common.] Openings made in the earth deep enough to reach water, which is driven up to find its level.

Arthrodia, (är-thrō'di-a). [Gk. *arthroo*, I join.]=Ball and socket joint, *q.v.*

Arthrodieæ, (är-thrō'de-ē). Bory's term for Algales, *q.v.*

Arthrogastra, (är-thro-gas'tra). [Gk. *arthron*, joint; *gaster*, stomach.] A sub-division of Arachnida, in which the abdomen is in segments.

Arthropoda,(är-throp'o-da) [Gk.*arthron*,joint; *podes*, feet]=Articulata=Arthropodaria: a sub-division of Annulosa, having jointed limbs attached to an exoskeleton; and the head composed of six somites and appendages, includes Insects, Myriapoda, Arachnida, and Crustacea.

Arthrozoa, (är-thro-zō'a.) [Gk. *arthron*, joint; *zoon*, animal.] Used by Burmeister for Vermes, Crustacea, Insecta, Myriapoda, and Arachnida; and by Fitzinger for Crustacea, Arachnida, and Insecta.

Artichoke, (är'ti-chōk). [Ar. *ardi*, earth; *schauki*, thorn.] Succulent receptacle of Cynara Scolymus. *Jerusalem A.*=Tubers of Helianthus tuberosus.

Articular, (är-tik'ū-lar). [L. *articularis*, belonging to a joint.] Relating to, or connected with, a joint. *A. bone*, a projection of the mandible; also a small bone in the ear=A segment of the malleus. *A. processes*, bony projections of vertebræ, by which they are connected.

Articulata, (är-tik-ū-lā'ta). [L. *articulus*, little joint.] 1. A sub-division of Brachiopoda. 2. A sub-division of Polyzoa. 3. A sub-division of Annulosa called Arthropoda.

Articulated limbs, (är-tik-u-lā'ted). [L. *articulatus*, jointed.] Jointed appendages: in Vertebrata never more than four, always having an internal skeleton. In Invertebrata the number may be greater than four, and the skeleton is external.

Artificial, (är-ti-fish'i-al). [L. *ars*, art; *facio*, I make.] Made by art. *A. bases*, organic chemical bases formed by synthesis or metathesis=Ammonia, Amide, Imide, Nitrile, and Ammonium, bases. *A. stone*, stone formed by aggregation of particles of sand by means of cement.

Artiodactyla, (är-ti-o-dak'til-a). [Gk. *artios*, even; *daktylos*, finger.] A division of Ungulata, including the Ruminantia, hippopotamus, and all others having either two or four functional toes and a complex stomach.

Artiomorpha, (är-ti-o-mor'fa). [Gk. *artios*, even; *morphe*, shape)=Artiozoaria: De Blainville's term for Vertebrata, Articulata, and Mollusca.

Artiozoaria, (är-ti-o-zō-ā'ri-a). [Gk. *artios*, even; *zoon*, animal.]=Artiomorpha, *q v.*

Artocarpaceæ, (är-tō-kär-pā'se-ē). [*Artocarpus*, *q.v.*]=Artocarpads=Bread-fruit, Upas, &c.; tropical shrubs and trees belonging to Urticales, with milky sap, dense flower-heads, and edible fruit; many yield caoutchouc.

Artocarpus, (är-tō-kär'pus). [Gk. *artos*, bread; *karpos*, fruit]. A tropical tree belonging to Artocarpaceæ. *A. incisa*=Breadfruit tree. *A. integrifolia*=Jack tree.

Arum, (ar'um). [*Aron*, the Greek name.]= Cuckoo pints: lords and ladies, &c.; an herb belonging to Araceæ.

Arvicola, (är-vik'o-la). [L. *arvum*, field; *colo*, I inhabit.] A field mouse.

Arytenoid, (a-ri-tē'noid.) [Gk. *arytaina*, pitcher.] Pitcher-shaped. *A. cartilage:* two small cartilages in the larynx.

Asafœtida, (as-a-fet'i-da). [L. *asa*, gum; *fœtida*, stinking.] 1. A gumresin having a strong unpleasant odour, obtained from Ferula A. and Narthex A. 2. Also used for the plant from which it is obtained.

Asangos. An African people.

Asarales, (as-a-rā'lēz). Plants with monochlamydeous flowers, and small albuminous embryo, forming a sub-division of Epigynous Exogens.

Asbestos, (as-bes'tos). [Gk. *asbestos*, indestructible.] A name used for actinolite, tremolite, and other minerals of the Amphibolic series, occurring in long hair-like crystals, which do not burn readily, and when fresh are often ductile.

Ascarides, (as-kar'i-dēz). [Ascaris, *q.v.*]= Thread worms: the plural of Ascaris, *q.v.*

Ascarina, (as-ka-rī'na). [Ascaris, *q.v.*] A plant, the anthers in the flowers of which resemble worms.

Ascaris, (as'ka-ris). [Gk. *askarizo*, I leap.] Thread worm.

Ascension, (as-sen'shun). [L. *ascensio*, rising.] *Right A.*: the distance of a star E or W. from the first point of Aries, measured along the equinoctial or celestial equator. *Ascensional difference*=Difference between right and oblique A.

Asci, (as'si). [Gk. *askos*, a leathern bottle.]

Membraneous sacs, containing the sporules of lichens, fungi, &c.
Ascian, (a'si-an). [Gk. *a*, not; *skia*, shadow.] Used of people living near the equator, who have sometimes the sun right overhead.
Ascidia, (as-sid'i-a). [Gk. *askidion*, a little wallet.] 1=Simple Ascidians: leathery molluscous animals, having no head or shell, found on rocks, &c., forming a division of Tunicata, and being probably the ancestors of vertebrate animals, since the embryo has a rudimentary chorda dorsalis. 2=Pitchers: bottle-shaped leaves found on some plants, as the Nepenthes.
Ascidians, (as-sid'i-anz). [Ascidia, *q.v.*] Invertebrate, hermaphrodite, marine animals, permanently fixed to a support: the larvæ can swim freely, like tadpoles. *Compound A.* =Botryllaria, *q.v.* *Simple A.*=Ascidia, *q.v.*
Ascidioida, (as-sid-i-oi'da). [Ascidia, *q.v.*; Gk. *eidos*, form.]=Tunicata: a division of Molluscoida, consisting of Ascidians and animals resembling them.
Ascidium, (as-sid'i-um). [Gk. *askidion*, a little bag.]=Pitcher leaf. *v.* Ascidia.
Asclepiadaceæ, (as-klē-pi-a-dā'se-ē). [Asclepias, *q.v.*]=Asclepiads: milky shrubs: often twining, with flowers in which the anthers and stigmas are consolidated, belonging to Solanales.
Asclepias, (as-klē'pi-as). [Gk. *Asklepios*, the god of medicine.] A genus of plants, including the swallow-wort, much used medicinally, belonging to Asclepiadaceæ.
Asclepion, (as-klē'pi-on). [Asclepias, *q.v.*]= $C_{40}H_{32}O_6$: a neutral principle found in the sap of Asclepias.
Ascomycetes, (as-ko-mī-sē'tēz). [Gk. *askos*, bag; *mykes*, mushroom.]=Morels: a division of Fungales, *q.v.*
Ascus, (as'kus). Singular of Asci, *q.v.*
Aseptic, (a-sep'tik). [Gk. *a*, not; *sepo*, I putrefy.] Not putrefying.
Asexual, (a-seks'u-al). [Gk. *a*, without; Sex, *q.v.*]=Agamic: without the distinction of sex. *A. reproduction*=Agamogenesis.
Ash, (ash). [*Æsc*, the A.-S. name.]=Fraxinus: a large tree, with tough elastic timber, belonging to Oleaceæ. *Common A.*=Fraxinus excelsior. *Flowering A.*=Ornus (from resemblance in form of leaves). *Mountain A.*= Rowan-tree=Pyrus aucuparia. *A. keys*= Seeds of ash-tree.
Ashantees, (a-shan'tēz). An African race.
Ashburnham beds. A sub-division of Hastings-sands: in Wealden formation.
Ashdown sand. A sub-division of Hastings-sands: in Wealden formation.
Ashlar, (ash'lar). [It. *asciare*, to square.] 1. Rough-hewn stones. 2=Ashler: stones used to face brick walls.
Ashlering, (ash'lẹr-ing). [Ashlar, *q.v.*] 1. Using ashlar or hewn stone. 2. An upright beam in the roof of a house, which helps to form the wall of the garret by cutting off the angle of roof and floor.
Asia, (ā'shi-a). One of the Asteroids, *q.v.*, No. 67.
Asilidæ, (a-sil'i-dē). [Asilus, *q.v.*] A family of insects, of which the hornet-fly is the type.
Asilus, (a-si'lus). [L. *asilus*, gad-fly.]=Hornet-fly: an insect belonging to Diptera.
Asiphonate, (a-sif'o-nāt). [Gk. *a*, without; *siphon*, tube.] Having no siphon or respiratory tube; used of a division of Lamellibranchiata.
Asira, (a-si'ra). An African race.
Asmanite, (as-man'īt) = A mineral, chiefly meteoric silica.
Asp, (asp). [*aspis*, the Greek name.]=Vipera aspis: a venomous serpent. The name is also used generally for several poisonous serpents.


Asp.

Asparagine, (as-par'a-jin). [Asparagus, *q.v.*]= $C_4H_8N_2O_3$: an amide of malic acid: a crystallisable monobasic compound found in many vegetables, and especially in asparagus: also called Althein and Asparamide.
Asparagineæ, (as-pa-raj'i-nē). [Asparagus, *q.v.*]=Liliaceæ, *q.v.*
Asparagolite, (as-pa-rag'o-līt). [Asparagus, *q.v.*]=Asparagus-stone, *q.v.*
Asparagus, (as-par'a-gus). [The Greek name.] =Asphodelus officinalis: a plant, belonging to Liliaceæ, the young shoots of which are edible. *A. beetle*=Crioceris asparagi: an insect, belonging to Eupoda, which feeds on asparagus. *A. stone*=Asparagolite: a variety of apatite, named from its greenish colour.
Asparamic acid, (as-par'a-mik). [Asparagus, *q.v.*]=Aspartic acid, *q.v.*
Asparamide, (as-par'a-mīd). [*Asparagus* and *amide*.]=Asparagine, *q.v.*
Aspartic acid, (as-par'tik). [Asparagus, *q.v.*] = $C_4H_7NO_4$ = Asparamic acid: a crystallised bibasic acid substance obtained from asparagine.
Aspasiolite, (as-pā'si-o-līt). A variety of Cordierite.
Aspect, (as'pekt). [L. *aspectus*, appearance.] The position of one star relatively to another.
Aspen, (as'pen). [*Aspe*, the old Saxon name.] =Populus tremula, *q.v.*: a poplar tree, the leaves of which move very readily in the wind.
Asperifoliæ, (as-per-i-fō'li-ē). [L. *asper*, rough; *folium*, leaf.] = Borage-worts=Boraginaceæ, *q.v.*: plants having rough leaves.
Asperifolious, (as-per-i-fō'li-us). [L. *asper*, rough; *folium*, leaf.] Having rough leaves.
Aspermous, (a-sper'mus.] [Gk. *a*, not; *sperma*, seed.] Having no seed.
Asperolite, (as-per'o-līt). [L. *asper*, rough.] A brittle silicate of copper.
Asperugo, (a-sper-ū'go). [L. *asper*, rough.]= Madder-worts = an herb with small blue flowers and rough leaves.
Asperula, (a-sper'u-la). [L. *asper*, rough.]= Wood-ruff, &c.: an herb with small funnel-shaped flowers, belonging to Galiaceæ. Named from many species having rough hairs.
Asphalt, (as'falt). [*asphaltos*, the Greek name.]=Bituminous limestone: a solid re-

sinous substance, usually black, resembling pitch, used for pavements, roofs, &c.; of vegetable origin, and composed chiefly of hydrocarbons. Also called mineral pitch and Jew's pitch; said to be a compound of petrolene and asphaltene.

Asphaltin, (as-falt'in). [Asphalt, *q.v.*]=Asphaltene=$C_{20}H_{32}O_3$: the chief constituent of asphalt; possibly an oxidised form of petrolene.

Asphaltum=Asphalt, *q.v.*

Asphodel, (as'fo-del). [Gk. *asphodelos*, daffodil.]=Asphodelus; also applied to some species of the Narcissus. *A. officinalis*=Asparagus. *Bog A.* = Narthecium ossifragum. *Scotch A.*=Tofieldia palustris.

Asphodeleæ, (as-fo-dē'le-ē). [Asphodel, *q.v.*] =Onion, &c.: plants forming a division of Liliaceæ, *q.v.*, having small gaily-coloured flowers: also used as=Liliaceæ.

Asphycta, (as-fik'ta). [Gk. *asphyctos*, without pulse.] Ehrenberg's term for a group of lower animals, including Bryozoa, Echinoidea, Acalephæ, &c.

Asphyxia, (as-fix'i-a). [Gk. *a*, not; *sphygmos*, pulse.] A temporary stoppage of the action of the heart, and consequent accumulation of carbonic acid and absence of oxygen in the blood, usually producing death: may be caused by strangulation, drowning, &c.

Aspic, (as'pik). [*Aspis*, the Latin name.]= Asp, *q.v.*

Aspidiaria, (as-pid-i-ā'ri-a). [Aspidium, *q.v.*] Plants, known only by fossil remains of stems, having shield-shaped leaf scaurs, found in coal.

Aspidium, (as-pid'i-um). [Gk. *aspis*, a shield.] =Shield fern: a fern, belonging to Polypodiaceæ, the involucres of which are shield-shaped. *A barometz*=Tartarian lamb.

Aspidorhynchus, (as-pid-o-rin'kus). [Gk. *aspis*, shield; *rhynchos*, beak.] Buckler-beak: a fish, known only by fossil remains found in Secondary rocks, having a beak-like upper jaw.

Aspidura, (as-pi-dū'ra). [Gk. *aspis*, shield; *oura*, tail.] A star-fish, known only by fossil remains found in the Muschelkalk of Germany, having small shield-like ossicles on the arms.

Aspirator, (as-pi-rā'tor). [L. *aspiro*, I breathe.] An apparatus for drawing a stream of gas through a vessel.

Aspleniopteris, (as-plē-ni-op'tėr-is). [Asplenium, *q.v.*; Gk. *pteris*, fern.] A fern-like plant, resembling the asplenium, known only by fossil remains found in Lias and Oolite rocks.

Asplenium, (as-plē'ni-um). [Gk. *a*, not; *splen*, spleen.] = Spleen-wort: a fern belonging to Polypodiaceæ, named from having been used as a medicine for the spleen.

Ass, (as). [L. *asinus*.] = Asinus = Equus asinus: an animal somewhat resembling the horse, but usually more or less marked by bands of colour, belonging to Equidæ, *q.v.*

Assafœtida=Asafœtida, *q.v.*

Assai = Euterpe oleracea; a plant found in Brazil.

Ass's-foot=Colt's foot=Tussilago farfara.

Assamar, (as'sam-ar). [L. *asso*, I roast; *amarus*, bitter.]=$C_{24}H_{13}O_{13}$: a bitter substance obtained from meat, bread, sugar, &c., by roasting them.

Assaying, (as-sā'ing). [F. *assayer*, to try.]= Partial analysis; for the purpose of estimating one constituent, usually a metal, of any compound: usually confined to the analysis of compounds containing silver or gold. *A. by dry method*=by heat. *A. by wet method* =by chemical agents.

Assimilation, (as-sim-i-lā'shun). [L. *ad*, to; *similis*, like.] The conversion of nutriment into the materials composing the substance of a plant or animal.

Astacolite, (as-tak'o-līt). [Gk. *astakos*, cray fish; *lithos*, stone.] Fossil remains of Crustaceans resembling the cray-fish.

Astacus, (as'ta-kus). [*Astakos*, the Greek name.] Cray-fish, &c.: Crustacean animals belonging to Macrura, *q.v.* Originally included many animals now formed into separate genera.

Astarte, (as-tār'te). [Classical.] 1. A conchiferous animal, belonging to Mollusca, known by fossil remains. 2 = Astartea: a plant belonging to Myrtaceæ.

Astatic, (a-stat'ik). [Gk. *a*, not; *statikos*, fixed —by the earth's magnetism.] Not under the influence of any directive action. *A. needle:* a magnetised needle so placed that the earth's magnetic influence on it is neutralised. *A. system:* two magnetised needles, combined so as to neutralise each other, and so remain in any position.

Aster, (as'tėr). [L. *aster*, star.] An herb, with star-like flowers, belonging to Asteraceæ; chiefly American.

Asteracanthus, (as-tėr-a-kan'thus). [Gk. *aster*, star; *akantha*, thorn.] A fish known only by fin-rays, found in Lias, Oolite, and Wealden rocks, ornamented with star-like tubercles.

Asteraceæ, (as-tėr-ā'se-ē). [Aster, *q.v.*]=Compositæ: an extensive and varied group of herbs and shrubs, with unisexual capitate flowerets, having syngenesious stamens; includes nearly $\frac{1}{8}$ of all known plants, belongs to Campanales.

Asteria, (as-tē'ri-a). [Gk. *aster*, star.]=Asterite, *q.v.*

Asteriadæ, (as-tėr-ī'a-dē)=Asteridea, *q.v.*

Asterias, (as-tē'ri-as). A genus of star-fishes, belonging to Asteridea.

Asterid, (as'tėr-id). [Gk. *aster*, star; *eidos*, form.]=A star-fish; used especially of the young condition.

Asteridea, (as-tėr-id'e-a).=Star-fishes: a division of Echinodermata; animals having flat, star-shaped bodies, with a mouth in the centre of one side, and the digestive and reproductive apparatus extending into the arms.

Asterion and Chara, (as-tē'ri-on)=Canes Venatici, *q.v.*

Asterism, (as'tėr-izm). [Gk. *aster*, star.] A small cluster of stars.

Asterite, (as'tėr-it.] A variety of sapphire or

corundum, which, when cut perpendicular to its axis, resembles a star.

Asteroidea, (as-ter-oi'de-a). [Gk. *aster*, a star; *eidos*, form.] A division of Echinodermata, including Ophiuridæ and Asteriadæ, or sand-stars, and star-fishes: pentagonal invertebrate animals, with coriaceous integument.

Asteroids, (as'ter-oidz). [Gk. *aster*, star; *eidos*, form.] 1. = Asteroidea, *q.v.* 2. = Minor planets=Planetoids: small stars, nearly 150 in number, varying from 20 to 250 miles in diameter, usually of low magnitude, whose orbits lie between those of Mars and Jupiter: supposed to be fragments of a large planet. These have been discovered at intervals between 1800 and now, and the number is frequently increased by new discoveries.

Asterolepis, (as-ter-ol'e-pis). [Gk. *aster*, star; *lepis*, scale.] A very large ganoid fish, remains of which are found in Devonian strata, named from the star-like markings on the head.

Asterophyllites, (as-ter-o-fil'līts). [Gk. *aster*, star; *phyllon*, leaf.] Fossil remains of plants, resembling Calamites, and allied to Lycopods, the leaves of which are in star-like whorls: common in Coal-measures.

Asthenia, (a-sthen'i-a). [Gk. *a*, without; *sthenos*, strength.] Weakness.

Asthenic, (a-sthen'ik). [Asthenia, *q.v.*] Having but little strength.

Asthenopia, (as-then-ō'pi-a). [Asthenia, *q.v.*; Gk. *ops*, eye.] Weakness of eyesight.

Astoma, (a'sto-ma). [Gk. *a*, without; *stoma*, mouth.] A sub-division of Infusoria, marked by the absence of any mouth.

Astomatous, (a-stom'a-tus). [Gk. *a*, without; *stoma*, mouth.] = Astomous: having no mouth.

Astracamite, (as'tra-ka-mīt). A white mineral, chiefly sulphate of magnesium and sodium.

Astræa, (as-trē'a). [Classical.] 1. One of the Asteroids, *q.v.*, No. 5. 2=Star-coral: a coral polype, belonging to Aporosa, *q.v.*

Astræidæ, (as-trē-i-dē). [Astræa, *q.v.*]=Star-corals: a family of coral polypes, of which Astræa is the type.

Astragal, (as'tra-gal.) [Gk. *astragalos*, ankle-bone.] A semicircular moulding, forming a kind of ring at the base and top of columns; sometimes cut into beads.

Astragalus, (as-trag'a-lus.) [Gk. *astragalos*, ankle bone.] 1. Milk Vetch: herbs and shrubs, some with stems that yield gums, belonging to Fabaceæ, said to be named from the shape of the seeds. 2. The bone in the ankle by which the foot bears the weight of the body.

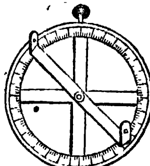
Astralite, (as'tra-līt). A glass flux resembling avanturine.

Astrea=Astræa, *q.v.*

Astrogeny, (as-troj'e-ni). [Gk. *aster*, star.]= Astronomy: the laws of the re-distribution of matter and motion among the molecules of celestial masses.

Astrography, (as-trog'ra-fi). [Gk. *aster*, star; *grapho*, I write.] A description of the planets, fixed stars, &c.

Astrolabe, (as'tro-lāb). [Gk. *aster*, star; *labein*, to take.] Originally used for any instrument used for observing stars; afterwards used for an instrument for measurement of altitude: replaced, in modern practice, by the quadrant.


Astrolabe.

Astrology, (as-trol'o-ji). [Gk. *aster*, star; *logos*, description.] Properly =Astronomy, but used only for the pretended science, now almost obsolete, of the influence of the stars upon the fortunes and actions of men.

Astrometry, (as-trom'e-tri). [Gk. *aster*, star; *metron*, measure.] The measurement of the stars as to their brightness, diameters, &c.

Astronomy, (as-tron'o-mi). [Gk. *aster*, star; *nomos*, law.] The science of the stars and their motions, and the laws governing them.

Astropecten, (as-tro-pek'ten). An animal belonging to Asteridea, which has no swimming organs, and is found only at the sea-bottom; found fossil in London Clay.

Astrophyllite, (as-tro-fil'līt). [Gk. *aster*, star *phyllon*, leaf.] A variety of mica, containing more iron than usual: named from the crystals being often in star-like groups. *A. crispatus.*

Astroscopy, (as-tros'ko-pi). [Gk. *aster*, star *skopeo*, I observe.] Observation of the stars.

Asymmetry, (a-sim'met-ri). [Gk. *asymmetros*, disproportionate.] Not symmetrical.

Asymptote, (a-simp'tōt). [Gk. *a*, not; *syn*, with; *ptosis*, fall.]=Asymtote: a line which continually approaches a curved line without ever actually touching it.

Asyzgetic, (a-siz'jet-ik). A system not in involution. A mathematical term.

Atacamite, (at'a-ka-mīt). [From Atacama, Peru.]=Native cupric oxychloride=Copper-sand, found in Chili and Australia.

Atalanta, (at-a-lan'ta). One of the Asteroids, *q.v.*, No. 36.

Atavism, (a'ta-vism). [L. *atavus*, ancestor.] The tendency of offspring to closely resemble their parents: one of the causes of species.

Ataxic, a-taks'ik). [Gk. *a*, not; *tasso*, I arrange.] Irregular; not in order. Cf. Taxonomy.

Ateles, (a'te-lēz.) [Gk. *ateles*, imperfect.]= Spider-monkeys: American monkeys, with long, slender limbs and prehensile tails, living in trees, and having no thumb, forming a division of Simia. *A. paniscus*=Quata= Coaita. *A. marginatus*=Chuva. *A. ater*, Cayou. *A. belzebub*=Marimonda. *A. hypoxanthus* = Mono. *A. subpentadactylus* = Chameck.

Athabasca, (ath-a-bas'ka). An American race.

Athamantin, (a-tha-man'tin).=$C_{24}H_{30}O_7$: a fibrous crystalline substance obtained from several species of the Athamanta plant.

Athar=Attar, *q.v.*

Atherfield clay. [Atherfield, in Isle of Wight.] A marine sub-division of Upper Neocomian rocks.

Athericera, (a-thėr-is′ėr-a). [Gk. *ather*, point; *keras*, horn.] A group of insects belonging to Diptera.

Atherina, (a-thėr-ī′na). Atherine: a fish, belonging to Abdominales. *A. presbyter* = Atherine=Sandsmelt.

Athermancy, (a-thėr′man-si). [Gk. *a*, not; *thermaino*, I heat.] The power of absorbing radiant heat: corresponding to opacity in the case of light.

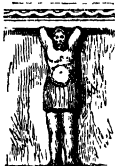
Athermanous, (a-thėr′man-us). [Athermancy, *q.v.*] Not allowing heat to pass through.

Atherospermaceæ, (a-thėr-ō-spėr-mā′se-ē) = Plume-nutmegs: fragrant trees of Australia and Chili, belonging to Menispermales.

Atherospermine, (a-thėr-o-spėr′min). A white electric powder obtained from the bark of Atherosperma.

Atlanta, (at-lan′ta). A small molluscous animal, belonging to Gasteropoda.

Atlantes, (at-lan′tēz). [The Greek name.] = Atlantides: figures of men used, instead of columns, to support an entablature. Cf. Caryatides.



Atlantes.

Atlantic ooze. [Atlantic Ocean.] A fine bluish-grey tenacious calcareous mud, with some sand and many Globigerinæ.

Atlantides, (at-lan′ti-dez). [The Greek name.] 1 = Pleiades, *q.v.* 2 = Atlantes, *q.v.*

Atlas, (at′las). [Gk. *Atlas*, who was said to carry the world.] 1. The first vertebra of the neck, which supports the weight of the head. 2. A cluster of stars. *A. moth* = Saturnia atlas, builds pensile nest.

Atmidoscope=Atmometer, *q.v.*

Atmology, (at-mol′o-ji). [Gk. *atmos*, vapour; *logos*, discourse.] The science of the nature and laws of vapours.

Atmometer, (at-mom′e-tėr). [Gk. *atmos*, vapour; *metron*, measure.] An instrument for measuring evaporation.

Atmosphere, (at′mos-fēr). [Gk. *atmos*, vapour; *sphaira*, sphere.] 1. The air surrounding the earth; also any vapour surrounding any heavenly body. *v.* Air. 2. Used as a measure of pressure: 1 At. = about 15 lbs. to the square inch; 2 At. = 30 lbs., &c.

Atoll, (at′ol). [The Maldive name.] = Lagoon island: a coral island, usually circular, having a lake in the centre.

Atom, (at′om). [Gk. *a*, not; *temno*, I cut.] An ultimate indivisible particle: estimated not to be smaller than $\frac{1}{500,000,000}$ inch in diameter in the case of water.

Atomic, (a-tom′ik). [Atom, *q.v.*] Relating to atoms. *A. theory* = Molecular theory: the theory that every substance is compounded of atoms which are unalterable in size, weight, or density, and which have a definite value in combining with each other. *A. volume* = Equivalent volume = Molecular volume = Specific volume = $\frac{\text{atomic weight}}{\text{specific gravity}}$: the space occupied by the quantity of a body proportionate to the atomic weight. *A. weight:* used by Berzelius to express the relative weights of equal gaseous volumes. The relative weight of any atom as compared with one atom of H.

Atomicity, (a-to-mis′i-ti). [Atom, *q.v.*] The combining capacity of a chemical element; whether monatomic, diatomic, &c.

Atrial, (a′tri-al). [L. *atrium*, hall or open court.] Belonging to an open space or hall. *A. system:* a number of connected cavities open to the exterior, found in the bodies of molluscoida. *A. chamber* = Atrium = The largest of these cavities, serving as the cloaca. *A. tunic*=The lining membrane of the atrium.

Atricha. A term used by Hoeven for a subdivision of the Infusoria.

Atriplex, (a′tri-pleks). [*Atriplex*, the Latin name.]=Orache: an herb or shrub with small flowers, belonging to Chenopodiaceæ.

Atrium, (at′ri-um). 1=Atrial chamber, *q.v.* 2. A large hall of audience.

Atropa, (at′ro-pa). [Gk. *Atropos*, one of the Fates.]=Dwale: an herb with violet or green flowers; mostly poisonous, belonging to Solanaceæ. *A belladonna*=Deadly nightshade. *A. mandragora*=Mandrake.

Atrophy, (at′rō-fi). [Gk, *a*, not; *trepho*, I nourish.] Wasting: want of nutriment.

Atropia, (at-rō′pi-a). [Atropa, *q.v.*] = Atropine = Daturine: composed of tropic and atropic acids=$C_{17}H_{23}NO_3$, a crystalline poisonous alkaline base found in the atropa, datura, &c. Sulphate of atropia is an antidote to Physostigma.

Atropic acid, (at′ro-pik). [Atropia.]=$C_9H_8O_2$: obtained from atropine, of which it is one of the constituents.

Atropous, (at′ro-pus). [Gk. *a*, not; *trepo*, I turn.] Used of seeds in which the embryo does not turn during growth. Cf. Anatropal.

Atrypa, (at′ri-pa). [Gk. *a*, without; *trype*, hole.] A shell, belonging to Brachiopoda, found in Palæozoic and Trias rocks, in which the foramen is very small.

Attar (of roses), (at′tar). [H. *utr*, essence.]= CH_2: a fragrant oily hydrocarbon obtained from rose leaves.

Attelabidæ, (at-te-lab′i-dē). A family of beetles, belonging to Rhynchophoridæ.

Attic, (attik). [Gk. *attikos*, Athenian.] The parapet wall forming the top of a facade; also used for a room at the top of a house. *A. base:* in Ionic and Doric consists of torus, scotia, and torus, with fillets between. *A. story:* the room or rooms behind the parapet wall or attic; also used generally for the top rooms of a house.

Attraction, (at-trak′shun). [L. *ad*, to; *traho*, I draw.] The force which every body exerts upon other bodies in tending to draw them towards itself, of which gravitation is an example.

Attractylic acid, (at-trak-til′ik). A tribasic acid obtained from the root of Attractylia sp.

Attwood's machine, [Attwood, the inventor.]

A machine which illustrates the laws of falling bodies, by showing the spaces through which they pass in given times. Cf. Morin's machine.

Auchenaspis, (aw-ken-as'pis). [Gk. *auchen*, neck; *aspis*, shield.] A fish, known only by fossil remains found in Old Red Sandstone rocks, resembling the Cephalaspis, *q.v.*: named from having a buckler-like plate on the neck.

Auchenia, (aw-kē'ni-a). [Gk. *auchen*, neck.] =Llama and alpaca: Illiger's name for the sub-division of Camelidæ, belonging to America, now called Llama, *q.v.*

Auditory, (awd'it-or-i). [L. *audio*, I hear.] Connected with hearing. *A. capsules:* cartilaginous enclosures of the internal ear. *A. meatus:* the canal leading to the internal ear. *A. nerves:* the nerves of hearing, connecting the ear with the brain. The eighth pair of cerebral nerves *A organ* = Ear. *A. ossicles.* small bones in the ear=Malleus, incus, and stapes.

Augite, (aw'jīt) [Gk. *auge*, lustre] = Pyroxene=(CaMgFeMn) O, SiO_2 a crystalline mineral, chiefly silicate of magnesium and calcium, belonging to Hornblende group.

Augustite, (aw-gus'tit)=Apatite, *q.v.*

Auk, (awk)=Alca, *q.v.*: a sea-bird: used generally for several different species. *Great A.* =Alca impennis: *Little A.*=Alca alle. *Perroquet A.*=Phaleris psittacula.

Aulostoma, (aw-los'to-ma). [Gk. *aulos*, pipe; *stoma*, mouth.]=Pipe-fishes, *q.v.*

Aurantia, (aw-ran'shi-a). [L. *aurum*, gold—from colour.]=Orange, &c.: plants belonging to Aurantiaceæ.

Aurantiaceæ, (aw-ran-ti-ā'se-ē). [Aurantia, *q.v.*] = Citron-worts: tropical trees and shrubs, with hard and compact stems, compound leaves, fragrant flowers, and consolidated succulent fruit, belonging to Rutales.

Aurantin, (aw-ran'tin). [Aurantia, *q.v.*]= Hesperidin, *q.v.*

Aurates, (aw'rāts). [Auric acid, *q.v.*] Compounds of peroxide of gold with a base.

Aurelia, (aw-rē'li-a). [L. *aureolus*, golden.] =Chrysalis=Pupa: the intermediate state of an insect between the caterpillar and imago, which in some is marked by a gold colour.

Aurella, (aw-rel'la). [L. *aurum*, gold.] Chrysalides of some Lepidoptera, which have a golden lustre.

Auric, (aw'rik). [L. *aurum*, gold.] Belonging to gold: the prefix for compounds containing gold as a chief constituent. Ex. Auric iodide=AuI_3. *A. acid* = Peroxide of gold=AuO_3.

Aurichalcite, (aw-ri-kal'sīt). [L. *aurum*, gold; Gk. *chalkos*, ore.] An ore of gold containing also copper.

Auricle, (aw'ri-kl). [L. *auriculus*, ear.] 1. The external ear. 2. The name given (because of their shape) to two cavities in a fully developed heart, which receive blood from the veins, and transfer it to the ventricles.

Auricula, (aw-rik'u-la). [Auricle, *q.v.*] 1. Midas's ear; a plant-eating molluscous animal, belonging to Pulmonifera, the shell of which resembles a human ear in shape. 2. Bear's ear: a variety of the primrose= Primula auricula.

Auricular, (aw-rik'ū-lār). [Auricle, *q.v.*] Connected with the ear or hearing. *A. muscles:* muscles belonging to the ear. *A. surface:* a portion of the os innominatum.

Auriculate, (aw-rik'u-lāt). [L. *auricula*, little ear.]=Auriform: ear-shaped.

Auriga, (aw-rī'ga). [L. *auriga*, charioteer.] =The Waggoner=The Charioteer: one of the northern constellations, of which Capella is the chief star.

Aurine, (aw'rīn). [L. *aurum*, gold.]=$C_{24}H_{18}O_8$ =Yellow coralline an orange-coloured dye, formed of sulphuric, carbolic, and oxalic acids.

Auro, (aw'rō). [L. *aurum*, gold.]=Aurous: a prefix for compounds containing gold as an important constituent.

Aurochsen, (aw'rok-sen)=Auroch=Bos urus= Bos Europæus=Lithuanian bison. *v* Bison.

Aurora australis = Southern dawn: phenomena corresponding to Aurora borealis, visible in the S. heavens.

Aurora borealis, (aw-rō'ra bō-re-ā'lis.] = Northern lights=Northern streamers=Polar light: a luminous appearance resembling daybreak, seen at times in the northern heavens.

Auroral, (aw-rō'ral). [L. *aurora*, daybreak.] Term used by Rogers, an American geologist, for American rocks corresponding to our Middle Cambrian rocks. *v.* Rogers' Nomenclature.

Auscultation, (aws-kul-tā'shun). [L. *ausculto*, I listen.] A method of discovering the condition of the heart, &c., by the sound of its working. Cf. Stethoscope.

Ausonia, One of the Asteroids, *q.v.*, No. 63.

Austral=Southern.

Autochthon, (aw-tok'thon). [Gk. *autos*, self; *chthon*, land]=Indigenous.

Autogenous, (aw-toj'en-us). [Gk. *autos*, self; *gennao*, I produce.]=Self-generated.

Autogony, (aw-tog'o-ni). [Gk. *autogennetos*, born of itself.] The generation of simple organisms from an inorganic formative fluid.

Automolite, (aw-tom'o-lit). [Gk. *automolos*, deserter.] = Gahnite: a variety of spinel coloured by zinc: also spelt automalite.

Autophagi, (aw-tof'a-ji). [Gk. *autos*, self; *phago*, I eat.] Used by Vogt of birds which can obtain food for themselves as soon as they are hatched.

Autumn, (aw'tum). [*Autumnus*, the L. word.] The third season of the year, the period of fruition in plants.

Autumn bells. [Shape and time of flowers.] =Gentiana pneumonanthe.

Autumnal, (aw-tum'nal). [Autumn.] Relating to Autumn. *A. equinox:* the point where the ecliptic and equator cross in Autumn. In theory this is at the beginning of Libra, but in reality is in Virgo. *A. point*=A. equinox, *q.v.* *A. signs*=Libra, Scorpio, and Sagittarius.

Avalanche, (av'a-lanch). [The French word.]

=Snow-slip: the fall of a large body of ice or snow down the slope of a hill.

Avanturine, (a-van'tu-rin). [F. *aventure,* chance.]=Aventurin: a mineral belonging to the quartz group, especially brilliant, owing to the presence of minute particles of mica. *A. glass*=Gold flux: glass artificially coloured so as to resemble avanturine. The name is said to have arisen from artificial aventurine having been first made by accident.

Avena, (a-vē'na). [The Latin name.]=Oat: a plant belonging to Graminaceæ. *A. sterilis* =Animal oat, *q.v.*

Avenaceous, (a-ve-nā'she-us). [Avena, *q.v.*] Relating to oats.

Avenin, (a've-nin). A nitrogenous substance, resembling legumin, found in oats.

Avens, (a'venz)=Geum, *q.v.*: a plant belonging to Rosaceæ. *Mountain A.*=Dryas octopetala.

Averdupoise=Avoirdupoise, *q.v.*

Averrhoa, (a-vẹr-hō'a). [Averhoes, a Spanish physician.] An East Indian plant, having fleshy winged fruits and sensitive leaves, belonging to Oxalidaceæ.

Aves, (a'vēz). [L. *aves,* birds.]=Birds: the general term for all birds: oviparous vertebrate biped animals, covered with feathers, and generally adapted to flying; have the fore-limbs developed into wings, and hot red blood; resemble mammalia in having an amnion and allantois, but differ in the ramus being in several pieces, and not articulated directly with the skull.

Avicularium, (a-vik-ū-lā'ri-um). [L. *avicula,* small bird.] An appendage present in some Polyzōa, named from its resemblance to the head of a bird, possibly zōoids.

Aviculopecten, (a-vik-u-lō-pek'ten). [L. *avicula,* little bird; *pecten,* comb.] A bivalve shell, common in Carboniferous Limestone.

Avifauna, (a-vi-faw'na). [L. *avis,* bird; *fauna,* animals.]=Birds.

Avis, (a'vis). [L. *avis,* a bird.] Singular of Aves, *q.v.*

Avocèt, (a'vo-set). A wading bird, belonging to Grallatores, with very long flexible curved beak=Recurvirostra avocetta.

Avoirdupoise weight, (av-war-du-pois'). The system of weight measurement in common use in Britain. 437½ grains=1 ounce; 7000 grains=1 pound; 28 pounds=1 quarter; 4 quarters = 1 hundredweight; 20 hundredweight=1 ton.

Awl-wort, (awl'wurt). [Shape of leaves.]= Subularia aquatica: a small aquatic plant.

Awn, (awn)=Arista: the beard of such plants as barley.

Axe-stone. A variety of jade-stone, used in the Pacific islands for axes and other weapons.

Axial, (ak'si-al). [Axis, *q.v.*]=Axile: connected with an axis. *A. muscle:* muscles connected directly or indirectly with the axis of the body or vertebræ. *A. skeleton:* the central axis of the body. *A. system of mineralogy:* by which the minerals are classed according to their axes. *A. development:* in most plants; and in Cœlenterata, Mollusca, Annulosa, and Vertebrata, amongst animals.

Axiferous, (ak-sif'ẹr-us). [Axis. *q.v.*; L. *fero,* I bear.] A term applied to plants having no leaves or other appendages to the stem or axis.

Axilla, (ak-sil'la). [L. *ala,* a wing.] 1. The arm pit. 2. The junction of a leaf with its stem. 3. Used generally for any junction of a limb with a central body.

Axillary, (ak-sil'la-ri). [Axilla, *q.v.*] Growing or proceeding from an axilla.

Axinite, (ak'sin-īt). [Gk. *axine,* axe.)=Thumite: a mineral of the garnet group: chiefly a silicate of alumina, lime, iron, &c., named from the shape of its crystals.

Axioms, (aks'i-omz). [Gk. *axioma.*]=Necessary truths: those that are self-evident, and therefore do not require to be demonstrated.

Axis, (ak'sis). [L. *axis,* axle tree.] 1=Shaft =Spindle=Axle=Arbor. 2. An imaginary line joining the N. and S. poles of a planet. 3. The central line of any organised body, as the stem of a plant. 4. An Indian deer, an animal belonging to Cervidæ. *A. vertebra* =The second vertebra of the neck, on which the atlas, supporting the head, turns as on an axis.

Axle, (ak'sl). [*axis,* the Latin word.] The axis upon which a wheel revolves.

Axolotl, (ak'so-lotl). [The Mexican name]= Axolotes=Gyrinus: a small amphibious animal, common in Mexico, having both lungs and gills.

Axotomous, (ak-sot'o-mus). [Gk. *axon,* axis; *temno,* I cleave.] Used of minerals that can be cleaved in one given direction.

Aye-aye, (ā̆ō-āē, its cry). [The local name.] =Cheiromys Madagascariensis: a nocturnal burrowing quadruped, found in Madagascar.

Aye-green. [A.-S. *aye,* ever, and green.]= Ever-green=Sempervivum.

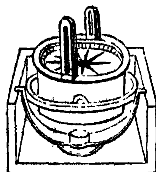
Aymaras. An American race.

Aymestry limestone. [A., Herefordshire.] Remarkable for numerous Pentameri: belongs to Ludlow formation.

Ayr-stone, (ār). [Ayr, in Scotland.]=Snakestone: a variety of whet-stone.

Azalea, (a-zā'le-a). [Gk. *azaleos,* parched.] =Loiseleuria procumbens: a fragrant plant belonging to Ericaceæ.

Azimuth, (a'zi-muth). [A. *al,* the; *samp,* path.] The horizontal angular distance between two meridians. *Magnetic A.:* the horizontal angular distance of the magnetic from the geographical meridian. *A. compass:* a variety of ship's compass.



Azimuth.

Azimuth circle, (az'i-muth). [Ar. *al,* the; *samp,* path.] A graduated circle, showing the difference between two celestial meridians.

Azo. A prefix implying the presence of nitrogen.

Azobenzene, (a-zo-ben'zēn). [*Azote* and *benzene, q.v.*] = $C_{12}H_{10}N_2$=Azobenzol=Azoben-

zide: a reddish crystalline substance obtained from nitrobenzene.

Azobenzoyl, (a-zo-ben'zoyl). [*Azote* and *benzoyl*, *q.v.*] = $C_{21}H_{15}N_2$: a crystalline substance obtained from ammonia and bitter-almond oil.

Azoic, (a-zō'ik). [Gk. *a*, not; *zoon*, animal.] 1. Without any traces of animal life: used in speaking of the earlier rocks, in which no animal remains have been found. 2. Without life, either animal or vegetable.

Azoleic acid=Œnanthylic acid, *q.v.*

Azote, (az'ōt). [Gk. *a*, not; *zoe*, life.]=Nitrogen: which forms four-fifths of the atmosphere, but will not support life.

Azotic acid=Nitric acid, *q.v.*

Azotides, (a'zo-tīdz). [Azote, *q.v.*]=Nitrides.

Azoxibenzol, (a-zok-si-ben'zol). [*Azote*, *oxygen*, and *benzol*, *q.v.*]=Azoxibenzene, *q.v.*= $(C_6H_5)_2N_2O$.

Azoxybenzene, (a-zok-si-ben'zēn). [*Azote*, *oxy*gen, and *benzene*, *q.v.*] = $C_{12}H_{10}N_2O$ = Azoxybenzol = Azoxybenzide=Azoxydifune: a yellow crystalline substance obtained from nitrobenzene.

Azure-stone=Lapis Lazuli, *q.v.*

Azurite, (a'zu-rīt). [F. *azur*, blue.]=Chessylite=Lazulite: an ore of copper, composed chiefly of hydrous carbonate.

Azygous, (a'zi-gus). [Gk. *a*, without; *zygon*, fellow]. Single: having no fellow.

Azymous, (az'i-mus). [Gk. *a*, without; *zyme*, leaven.] Unfermented.

B.

Babbitt's metal, (bab'bit). An alloy of copper, tin, and zinc; named after the inventor.

Babel-quartz, (bā'bl). A variety of rock-crystal, the form of which has some faint resemblance to the tower of Babel.

Babiana, (ba-bi-ā'na). [Baboon, *q.v.*] A plant belonging to Iridaceæ, the roots of which are eaten by baboons.

Babingtonite, (bab'ing-ton-īt). [Mr. Babington.] A mineral, chiefly silicate of iron and calcium; a variety of hornblende.

Babiroussa, (ba-bi-rōō'sa) = Horned hog: a wild animal of the boar kind, found in Malay islands, having large and curved canine teeth.

Baboon, (ba-bōōn'). [*Babouin*, the French name.] = Cynocephalus = Dog-headed monkey: a catarhine monkey, the ugliest and lowest of the Quadrumana, almost exclusively African: lives on the ground amongst hills and rocks; also called the Howling monkey of the Old World.

Baccate, (bak'kāt). [L. *bacca*, berry.] Berry-like.

Baccharis, (bak'kar-is). [Bacchus, god of wine.] = Ploughman's spikenard: a plant, belonging to Asteraceæ, having a wine-like odour.

Bacciferous, (bac-sif'er-us). [*Bacciferus*, the Latin word.] Bearing berries.

Baccivorous, (bak-siv'or-us. [L. *bacca*, berry; *voro*, I eat.] Feeding on berries.

Bachelor's buttons. The popular name of a variety of Ranunculus.

Bacillary layer, (ba-sil'la-ri). [L. *bacillum*, little staff.] In the retina of the eye: a layer of minute rods and cones.

Bacillaria, (ba-sil-lā'ri-a). [L. *bacillum*, little staff.] Used by Ehrenberg for a group of Infusoria.

Backbone, (bak'bōn). [Back and bone.]=Vertebræ=The spine: the central bone of the endoskeleton.

Backstays, (bak'stāz). [Back and stay=to hold.] In a ship, long ropes from the mast head to the channels, helping to steady the mast.

Bacon-beetle=Dermestes lardarius: a beetle belonging to Necrophaga.

Bacteria, (bak-tē'ri-a). [Gk. *bakteria*, little stick.]=Microzymes: very minute organisms found in infusions of hay. *v.* Spontaneous generation.

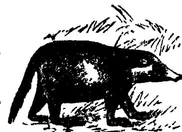
Bactris, (bak'tris). [Gk. *baktron*, cane.] A species of palm tree: the branches of which are used for canes.

Baculites, (bak'ū-līts.) [L. *baculum*, a stick.] A group of Ammonites, with straight conical shells, with many chambers; common in chalk rocks.

Baculometry, (bak-u-lom'et-ri). [L. *baculum*, stick; *metron*, measure.] Used of measurement by rods or sticks.

Badge, (baj). [A.-S. *beag*, a crown.] A small port near the stern of a ship.

Badger, (ba'jer). [L. *blada*, corn.]=Meles: a nocturnal burrowing corn-eating quadruped.


Indian Badger.

Badigeon, (ba-dij'-un). [*Badigeon*, the French name.] A stone-coloured cement or paint.

Baer's classification of animals, according to embryological characteristics, of which the principal divisions are: Double symmetrical type=Vertebrata. Longitudinal type =Articulata. Massive type=Mollusca. Peripheric type=Radiata.

Bagrationite, (ba-gra'shun-īt). A variety of Orthite.

Bagshot-beds. [Bagshot, in Surrey.]=Bracklesham beds: of coloured sands and clays, with few fossils, in Isle of Wight and Sussex, belonging to Middle Eocene strata.

Baguette, (ba-get'). [The French name.] A small round moulding.

Baierin, (bā'ęr-in) = Baierite: a variety of Niobite.
Baikalite, (bā'ka-līt). [Lake Baika.] A variety of augite, found near Baika, a lake in Siberia.
Bailey's beads. [Bailey, the discoverer.] A string of bright spots, seen round part of the moon in an annular eclipse.
Bakalahari. A timid race, found in the desert of Africa.
Bakeless. An African people.
Bakevellia, (băk-vel'li-a). A Permian shell.
Bala beds. [Bala, in Wales.] = Bala and Caradoc beds: the highest of the Lower Silurian strata: remarkable for fossil brachiopoda and trilobites.
Balæna, (ba-lē'na). [The Latin name.] A genus of Cetacean mammalia, which includes the whale.
Balænidæ, (ba-lē'ni-dē). [Balæna, *q.v.*] = Whales: a general name for all animals resembling the whale.
Balænodon, (ba-lē'no-don). [*Balæna* and *Odontes*, *q.v.*] A term used for several teeth of whales, found in a semi-fossil condition.
Balænoptera, (ba-lē-nop'tęr-a). [Balæna, *q.v.*: *ptera*, fins] = Finners: whales having a fin on the back.
Balais ruby. A variety of spinel, *q.v.*
Balance, (bal'ans). [L. *bis*, two; *lanx*, scale.] = Libra: a sign of the Zodiac.
Balanced slide. A valve so arranged that the pressure of steam upon it is balanced, and does not prevent it being easily moved.
Balancers = Halteres, *q.v.*
Balanidæ, (ba-lan'i-dē). [Balanus, *q.v.*] = Acorn shells = Sessile Cirripedes: small sessile fixed crustacean animals; a sub-division of Cirripedia, often spoken of as Sessilé Cirripedes.
Balaninus, (ba-la-nī'nus). [L. *balanus*, acorn.] An insect belonging to Coleoptera. *B. nucum* = Nut weevil.
Balanites, (bal'a-nīts). [Balanus, *q.v.*] Fossil Balanidæ.
Balanoid, (bal'an-oid). [Balanus, *q.v.*; Gk. *eidos*, form.] Resembling barnacles, or acorn shells.
Balanophoraceæ, (bal-an-ō-for-ā'se-ē). [Gk. *balanos*, acorn; *phoreo*, I carry.] Parasitical fungus-like plants, belonging to Rhizogens, growing upon roots of trees, &c.
Balantia, (bal-an'shi-a). [Gk. *balantion*, a money bag.] 1. = Phalanger, a marsupial animal, somewhat resembling the fox. 2. A fern.
Balanus, (bal'an-ųs). [L. *balanus*, acorn.] = Acorn shell. A small crustacean animal, usually found on rocks, ships, &c., having a shell somewhat acorn-shaped.
Balas ruby = Ballas, *q.v.*
Balata, (ba'la-ta). [Bully tree.] A gum resin; the dried sap of Sapota Muelleri or Bully tree.
Balcony, (bal'ko-ni). [*Balcon*, the French name.] 1. A gallery outside a building. 2. A gallery in the stern of a large ship.
Baldachin, (bal'da-kin). [*Baldachino*, the Italian name.] A canopy of state, especially one used above an altar.
Bald buzzard = Falco haliætus = Osprey = Fishing eagle: a bird of prey belonging to Falconidæ.
Bald-coot = Porphyrio melanotus, a S. Australian bird.
Bald crow = Corvus calvus, a bird belonging to Corvidæ.
Bald money. [A corruption of L. *valde bona*, very good.] = Meum authamanticum. A small herb.
Baldwin's phosphorus. Fused nitrate of lime, which emits light for hours after exposure to sunlight.
Balearica, (ba-le-ā'ri-ka). = Crowned crane: an African bird, belonging to Grallatores.
Baleen, (ba'lēn). [Balœna, *q.v.*] = Whalebone: the horny plates lining the roof of the mouth in some whales.
Balinese. An Oceanic race.
Balistes, (ba-lis'tēz). [Gk. *ballo*, I throw; dart.] Balistini = Leather jackets = File fish. New Zealand fish with very tough, spiny skins; intermediate between bony and cartilaginous fishes.
Balistidæ, (ba-list'i-dē). [Balistes, *q.v.*] File fishes: a sub-division of Plectognathi, *q.v.*
Ball and socket joint, in which a spheroidal surface moves in a cup-like surface, so as to permit motion in any direction, as in the hip or elbow joints.
Ball-soda. A compound of soda with lime, and formed in the manufacture of sodic carbonate.
Ball-stone = Wenlock limestone, with large nodules.
Ball-tin. Balls of tin formed by pouring melted tin upon a copper plate.
Ball-vein. A miner's term for a vein in which the metal occurs in nodules.
Ball's dredge. [Dr. Ball, inventor.] A bag of fine network, with a scraper on each side of the mouth.
Ballan wrasse = Labrus bergylta = L. maculatus, *q.v.*
Ballas ruby, (bal'las). A variety of spinel, *q.v.*
Ballast, (bal'last). [A.-S. *bal*, boat; *last*, load.] Any heavy weight carried in the hold of a vessel to bring the centre of gravity lower down, and so keep the vessel steady.
Ballesterosite. A variety of iron pyrites.
Ballister, (bal'lis-tęr). [L. *balustrum*.] = Baluster, *q.v.*
Ballistic pendulum, (bal-lis'tik). [Gk. *ballo*, I throw.] A suspended block of wood used to measure the velocity of projectiles, by the number and extent of its oscillations when struck by the projectile.
Ballock-grass, (bal'lok). [A.-S. *bealloc-wyrt*.] A name sometimes used for orchis.
Balloon, (bal-lōōn'). [*Ballon*, the French name.] 1. A spheroid of any light impermeable material, usually silk, which, when filled with any gas lighter than air (usually hydrogen), rises through the atmosphere. 2. A spherical glass vessel used in chemistry.
Ballota, (bal'lo-ta). [*Ballo*, I reject—unpleasant.] = Stinking or black horehound: an herb belonging to Lamiaceæ.
Balm, (bȧm). [L. *balsamum*, balsam-gum.] = Balsam, *q.v.* = Melissa. *B. of Gilead*, obtained from Icica carana and Dracocephalum. *B. of Mecca*, obtained from Balsamodendron myrrha. *Canada B.*, from Abies balsamea.

Balsam, (bal'sam). [*Balsamum*, the Latin name.]=Impatiens: a plant, chiefly East Indian, the type of Balsaminaceæ. *B. fir*= Abies balsamifera. *B. of Peru*=Myrospermum peruiferum.

Balsam-bog=Bolax glebaria.

Balsams, (bal'samz). [Balsam, *q.v.*] 1.=Balsaminaceæ. 2. Aromatic liquids, compounds of resins and volatile oils, obtained from trees; intermediate between volatile oils and perfect resins.

Balsams, Artificial. *B. opodeldoc*, a solution of soap in alcohol and ammonia. *B. sulphuris*, a solution of sulphur in linseed oil.

Balsamifluæ, (bal-sam-if'lu-ē).=Liquidambars =Altingiaceæ, *q.v.*

Balsaminaceæ, (bal-sam-in-ā'se-ē). [Balsam, *q.v.*]=Balsams: succulent herbs, chiefly E. Indian, belonging to Geraniales.

Balsamodendron, (bal-sam-ō-dend'ron). [The Greek name.] A name for trees yielding balm of Gilead, &c., belonging to Amyridaceæ.

Baltimore oriole = Yphantes Baltimore: a bird, also called the honey-bird.

Baltimorite. A fibrous variety of Serpentine.

Baluster, (bal'us-ter). [L. *balustrum*, a place railed in.]=Ballister: an ornamental railing or small column. one of a series called a balustrade.

Balustrade, (bal'us-trād). [L. *baluster*, *q.v.*] A row of balusters, used to inclose a staircase, terrace, balcony, &c.

Bamboo, (bam-boo). [The Malay name.]= Bambusa, *q.v.*

Bambusa, (bam-bōō'sa). [*Bambos*, the Indian name.]=Bamboo: a division of Gramınaceæ. Grass-like plants growing to the size of trees, with hard, hollow stems, which are used for walking-sticks, &c.

Bambusaceæ, (bam-bōō-sā'se-ē). [Bambusa, *q.v.*] Plants, of which the Bambusa is the type, growing wild in marshy places.

Bamlite, (bam'līt). A mineral, chiefly silicate of aluminium.

Banana, (ba-nä'na). [*Banana*, the Spanish name.] = Musa sapientum, and other species: a variety of the plantain tree, belonging to Musaceæ. *Wild B.* = Urania Amazonia, has leaves 8 ft. long.


Banana

Band, (band). [*Banda*, the A.-S. name.] 1. A flat moulding used in architecture. 2.=Wrapping connector: a belt of leather, gutta percha, &c.; a cord or a chain used to communicate motion from one part of a machine to another.

Bandelet, (band'let). [Dim. of band, *q.v.*] A small band or flat moulding.

Banderole, (band'rōl). [The French name.] A narrow streamer or flag; especially one encircling a staff.

Band fish=Cepola rubescens.

Bandicoot, (ban'di-kōōt). [The native name.] 1.=Perameles, an Australian marsupial animal. 2.=Mus giganteus=Great Rat of India.

Bandicoots, (ban'di-kōōts). [Bandicoot, *q.v.*] =Perameleidæ: small Australian animals resembling hedgehogs.

Bandolier, (ban'do-lēr)=Zanonia indica, *q.v.*; also called Indian cucumber.

Baneberry, (bān'ber-ri). [A.-S. *bana*, poison; and berry.]=Actæa spicata: an herb with fetid leaves and poisonous pulpy fruit, belonging to Ranunculaceæ.

Banewort, (bān'wurt). [A.-S. *bana*, poison; *wyrt*, plant.]=Ranunculus flammula: a poisonous plant.

Bangor group=Longmynd, *q.v.*

Banian=Banyan, *q. v.*

Banister, (ban'is-ter) [A corruption of Baluster, *q.v.*] Especially used in the case of staircase railings.

Bankans, (ban'kanz). An Oceanic race.

Bank-cress. [Grows on banks.]=Sisymbrium officinale=Hedge mustard.

Banker, (bang'ker). [A.-S. *banc*, bench.] A stone bench used in masonry work.

Banksia, (bangk-si-à). [Sir J. Banks.] Australian plants belonging to Proteaceæ.

Bannock fleuk, (ban'nok).=Rhombus maximus, *q.v.*

Banquette, (bang-ket'). [The French word.] A small bank, usually of earth, against the parapet of a rampart.

Banstickle=Gasterosteus, *q.v.*

Banwell cave, (ban'well). [B., in Somersetshire.] In the Carboniferous Limestone, from which many mammalian remains have been obtained.

Banxring, (bangks'ring). [The Sumatran name.]=Tupaia Javanica: a small arboreal animal resembling the shrew.

Banyan tree, (ban'-yan). [The Indian name.]=Ficus indica. An Indian tree with large branches, some of which root again into the earth.


Banyan Tree.

Baobab, (bā'ō-bab). [*Bahobab*, the Egyptian name.] = Adansonia: the largest tree in the world; found in tropical Africa, with a trunk 20 to 30 ft. in diameter; also called monkey-bread tree: belongs to Bombaceæ.


Baobab Tree.

Baptistery, (bap-tis'ter-i). [Gk. *baptisterion.*] A building for the ceremony of baptism.

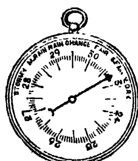
Bar, (bår). [A.-S. *beorgan*, to shut in.] A dry level between two waters.

Bar-magnet. A straight magnet, the ends being the poles.

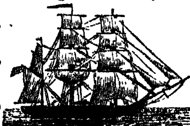
Baralite, (ba'ra-līt). [Baralon, in France.] A mineral containing silica, alumina, iron, lime, and magnesia.

Barammonium, (bar-am-mō'ni-um). [*Barium*

and *ammonium.*] A compound of barium and ammonium.
Barb, (bärb). [From Barbary.] 1. A variety of pigeon. 2. A horse of a Barbary stock.
Barbacou, (bär-ba-kōō'). A kingfisher.
Barbara's cress. [St. Barbara; or a corruption of barbel's cress, eaten by barbels.]=Barbarea vulgaris.
Barbarea, (bar-bar'e-a). [St. Barbara.]=Winter-cress: an herb belonging to Brassicaceæ.
Barbary-ape=Simia sylvanus.
Barbasco, (bär-bas'ko)=Jacquinia armillaris: a tree found in tropical America, the sap of which is used to poison fishes.
Barbel, (bär'bel). [*Barbus*, the Latin name.] =Barbus, *q.v.* A carp-like fish.
Barberry, (bär'ber-ri). [*Berberis*, the Latin name.]=Berberis. A shrub, with edible fruit. *B. blight*, a species of Æcidium, a parisitic fungus, found on the barberry.
Barbets, (bär'bets). [L. *barbus*, bearded.]= Puff-birds=Bucco: climbing birds, with large conical-bearded beaks.
Barbette, (bär-bet'). [The French word.] A terrace or bank of earth, on the inner side of a parapet, on which guns may be mounted.
Barbican, (bar'bi-kan). [*Barbacane*, the French name.] An outer fortification, intended for the defence of an entrance or approach.
Barbituric acid, (bär-bi-tū'rik)=$C_4H_4N_2O_3.2H_2O$: a crystalline acid, formed by action of urea upon malonic acid.
Barbule, (bär'būl). [L. *barba*, beard.] A diminutive of beard.
Barbus, (bär'bus). [L. *barba*, beard.]= Barbel. A carp-like fish, having fleshy, beard-like projections at the mouth: fresh water and herbivorous.
Baregin. [Bareges, in France.] = Glairin= Plombierin: a gelatinous or horny substance found in sulphurous thermal springs.
Barge, (bärj). [The O. French name.] A boat, about 30 ft. long, used for conveyance of officers and other persons of rank; a pleasure boat. *B. boards:* used in gables of buildings, forming a decorative ending, and serving to keep off the rain. *B. course:* the tiles that project over the gable end of a house, &c. *B. couple:* a strengthening beam.
Baric, (bā'rik). [Barium, *q.v.*] Containing barium as a constituent.
Barilla, (ba-ril'la). [The Spanish name.]= Barillor: ash of marine plants, especially Salsola=Impure carbonate of soda.
Barita, (ba'ri-ta). A crow-like bird. *B. tibicen*=Piping crow of N. S. Wales.
Barium, (bā'ri-um). [Gk. *barys*, heavy.]=Ba": one of the metals of the alkaline earths, and the heaviest of the alkaline metals; a yellow substance which decomposes water by reason of its affinity for oxygen.
Bark, (bärk). [*Beorcan*, the A.-S. name.] 1. The outer coating of trees. *Cascarilla B.* of Croxton eleutheria. *Jesuit's B*, of Solanum pseudoquina. *Peruvian B.* of Cinchona condaminea. 2.=Barque, *q.v.*
Barker's mill=Hydraulic tourniquet, *q.v.*
Barley, (bär'li). [A.-S. *bere*, barley; *leac*, plant.]=Hordeum: a variety of corn, especially grown to be converted into malt: one of the cereals, *q.v.* *Wall B.* = Hordeum murinum.
Barley-bird, (bär'li-berd)=Fringilla spinus: a perching bird.
Barley-sugar, (bär'li-shū'gar). A transparent form of sucrose.
Barm, (bärm). [*Beorma*, the A.-S. name.]= Yeast: a fungus-like substance found in fermenting liquids, which has the property of causing fermentation; for which purpose it is used in breadmaking.
Barnaby-thistle. [Flowers about St. Barnabas' day.]=Centaurea solstitialis: a plant belonging to Compositæ.
Barnacle, (bär'na-kl). [*Perna*, the Latin name.]=Lepas anatifera: a small crustacean animal usually found adhering by the peduncle to other animals, ships, rocks, &c. The name is also said to be derived from S. *bearn*, child; *aac*, oak, from its being supposed to grow on oak trees.
Barnacles, (bär'na-klz). [Barnacle, *q.v.*]= Lepadidæ, *q.v.*: a sub-division of Cirripedia.
Barnhardtite, (bärn-härd'tit). [Barnhardt's Land, N. Carolina.] A mineral, chiefly sulphide of copper.
Barnstickle, (bärn'stikl) = Gasterosteus trachurus=Stickleback: a small pond fish.
Barocalcite, (bā-ro-kal'sit). [Baryta and Calcium, *q.v.*]=Baryto-calcite, *q.v.* A translucent mineral.
Barograph, (bar'ō-graf). [Gk. *baros*, weight; *grapho*, I write.] = Recording barometer: a barometer and auxiliary apparatus for registering its variations.
Barolite, (bār'o-lit). [Barium, *q.v.*]=Witherite: a mineral, chiefly carbonate of barium.
Barometer, (ba-rom'e-ter). [Gk. *baros*, weight; *metron*, measure.] An instrument for measuring the pressure of the atmosphere, and thus to tell the height of a mountain or the probable state of the weather.


Barometer.

Barometric, (ba-ro-met'rik). [Barometer, *q.v.*] Connected with a barometer. *B. column:* the column of mercury which in an ordinary barometer is supported by the pressure of the air. *B. height:* the height of the column of mercury, usually about 29 in.
Barometz, (ba'ro-metz) = Hare's-foot fern= Aspidium barometz=Tartarian-lamb, *q.v.*
Baroscope, (bar'o-skōp.) [Gk. *baros*, weight; *skopeo*, I mark.] A balance supporting two balls, of unequal sizes but equal weights, in air; in a lighter gas the larger ball falls; in a heavier gas it rises.
Baroselenite, (bā-ro-sel'o-nit). [Gk. *barys*, heavy; *selene*, bright.] = Barytes, *q.v.*
Barque, (bärk). [The French name.] Properly, a three-


Barque.

masted vessel; used also for any small vessel.

Barracuda=Sphyræna, *q.v.*: a fish.

Barren-wort. [Said to cause sterility.] = Epimedium alpinum.

Barrier-reefs=Coral reefs parallel to a coast, but often many miles distant.

Barringtoniaceæ, (bar-ring-to-ni-ā'se-ē). [Mr. Barrington.] = Barringtoniads: tropical shrubs and trees, with pulpy fruit, belonging to Grossales.

Barris, (bar'ris). A common name for the mandrill and the chimpanzee.

Barrow, (bar'rō). [A.-S. *beorg*, hill.] A heap of stones forming a raised grave.

Barsowite, (bär'sō-wīt). [Barsowska river, Ural Mountains.] A white mineral, chiefly silicate of calcium and aluminium.

Bartizan, (bar-ti-zan'). [The French word.] A small projecting turret, at the corner of a building.

Bartling's classification of plants, made 1830. Cellular: Homonemeous=Algæ and lichens, &c.; Heteronemeous = Mosses. Vascular: Cryptogamic = Ferns, &c.; Phanerogamic = Flowering plants.

Barton beds, (bär'ton). [Barton, in Hampshire.] = Upper Bagshot: the lowest of the Upper Eocene strata.

Barton's buttons. [Mr. Barton, the maker.] Steel buttons having the surface engraved with very fine lines, so as to refract light in an ornamental manner.

Barwood, (bär'wŏŏd) = Camwood: a wood used in dyeing, coloured red by santolin.

Barystrontianite, (ba-ri-stron'shi-an-īt). [Barytes and Strontia, *q.v.*] = Stromnite: a mineral containing carbonate of strontium and sulphate of barium.

Baryta, (ba-rī'ta). [Barium, *q.v.*] = Baric oxide=BaO: the protoxide of barium, found in crystalline and earthy forms, used in manufacture of paint, &c.; also called barytes.

Barytes, (ba-rī'tēz). [Barium, *q.v.*] = Heavy spar=Native sulphate of barium=$BaSO_4$: a crystalline mineral, poisonous, used in making paint: also used as=Baryta.

Barytine, (ba-rī'tin). [Barium, *q.v.*]=Barytes, *q.v.*

Baryto-calcite, (ba-rī'to-kal'sīt)=Alstonite: a mineral, chiefly carbonite of calcium and barium.

Barytophyllite, (ba-rī-to-fil'līt)=Chloritoide: a silicate of alumina and iron.

Barytum, (ba-rī'tum). [Barytes, *q.v.*] Sometimes used for barium.

Basalt, (ba-sawlt'). [*Basaltes*, the Latin name.] A compact amorphous igneous rock, of which silica, in the forms of augite and felspar, is the chief constituent, and which has usually cooled in columns: a variety of trappean rocks.


Basalt.

Basaltine, (ba-sawl'tin). [Basalt, *q.v.*]=Crystallised hornblende: a mineral found in basalt.

Basalts, (ba-sawltz'). [Basalt, *q.v.*] A division of trappean or volcanic rocks, containing more lime and magnesia and less silica than the others.

Basanite, (baz'a-nīt). [Gk. *basanos*, touchstone.] = Lydian stone: chiefly a silicate of lime, magnesia, &c.; a variety of jasper.

Bascanion, (bas-kā'ni-on). A snake belonging to Viperina. *B. constrictor*=Black snake.

Base, (bās). [Gk. *basis*, foundation.] 1. The lowest, fundamental portion, as of a column, &c. 2. The principal line of a survey, to which the others are referred. 3. A compound, relatively electro-positive, substance, which will combine with an acid so as to form a salt. *Ammonia bases:* volatile; resembling ammonia in character. *Ammonium bases:* non-volatile; resembling caustic potash in character. *Bases of organic origin* =Organic alkalies=Alkaloids.

Base broom. [Used as a base in dyeing.]= Genista humilis=Genista tinctoria.

Base rocket. [Used as a base in dyeing.]= Reseda lutea: a variety of mignonette.

Basellaceæ, (ba-sel-lā'se-ē). [*Basella*, the Malabar name]=Basellads: climbing herbs and shrubs, usually succulent, belonging to Ficoidales.

Basi-branchials, (bā-si-brang'ki-alz.) [Base and Branchial, *q.v.*] Series of pieces to which the branchial arches are attached.

Basic, (bā'sik). [Base, *q.v.*] Having the properties of a base; able to combine with an acid to form a salt.

Basic group=Dycrasite group, *q.v.*

Basic-hydrogen. The hydrogen contained in an acid which is readily replaced by a metal or basylous radicle.

Basic salts=Sub-salts: in which the proportion of the base is greater than that of the acid, the excess being attached as water of crystallization is.

Basi-cranial axis of the skull. A line drawn from the upper surface of the sphenoid to the anterior margin of the foramen magnum.

Basicity, (ba-sis'i-ti). [Base, *q.v.*] The power of an acid, or electro-negative, constituent of a salt to combine with a base: measured by the numbers of atoms of basic hydrogen, *q.v.*

Basidia, (bā-sid'i-a) = Sporophores: minute stalks supporting spores, in ferns, &c. *B. spores*, the spores on basidia.

Basidium, (bā-sid'i-um). Singular of Basidia, *q.v.*

Basifacial axis, (bā-si-fā'si-al). [Base and facial.] A line drawn from the sphenoid to the alveolar margin of the maxilla.

Basi-hyal, (bā-si-hī'al). [Base and Hyal, *q.v.*] The body of the hyoid bone; in man, a small bone beneath the tongue.

Basil, (băz'il). [Gk. *basilikos*, royal.] 1.=Ocymum basilicum: an aromatic herb. 2. Wild B. = Calamintha clinopodium. 3. Tanned sheepskin.

Basilar, (baz'i-lar). [Base, *q.v.*] Belonging to a base. *B. artery*, formed by the union of two vertebral arteries, which serve the brain. *B. region*, the lowest part of the skull.

Basilica, (ba-sil'ik-a). [Gk. *basilike.*] Pro-

perly a royal residence; but also used for any spacious, roofed building supported by columns.

Basilisk, (baz'il-isk). [*Basiliskos*, the Greek name.]=Basiliscus mitratus: a small Saurian reptile.

Basilosaurus, (ba-sil-o-saw'rus). [Gk. *basileus*, king; *saurus*, a lizard.]=Zeuglodon: a large whale, known only by fossil remains in Eocene strata in Alabama. Its name is owing to its having been supposed, when first discovered, to be a huge reptile.

Basin, (bā'sn). [*Bassin*, the French name.] 1. In geology=Syncline, a depression in the surface, caused by sinclinal dips. 2. All the land drained by all the rivers entering any given sea is called the basin of that sea.

Basioccipital, (bā-si-ok-sip'it-al). [L. *basis*, base; *occipitium*, back of head.] The centre of the first cranial segment of the skull, the base of the occipital bone. *B. tooth:* a tooth on the basioccipital bone, as in the Tench.

Basisphenoid, (bā-si-sfē'noid). [L. *basis*, base; Sphenoid, *q.v.*] The centre of the second cranial segment of the skull; the posterior portion of the sphenoid.

Basket of lamprey. A cartilaginous basket-like process supporting the gills.

Basking shark=Selachus maximus: the largest known shark, found in Northern seas, and named from its habit of floating in the sunlight.

Basque language, (bask). [The French word.] Spoken in the Basque provinces and in Navarre.

Bass, (bās)=Basso=Labrax lupus=Perca labrax=Sciæna labrax: a fish of the perch kind.

Basset, (bas'set). [F. *bassette*, low.]=Outcrop: the portion of an inclined stratum that comes to the surface.

Bassia, (bas'si-a). A plant of Africa and India. *B. butyracea*=Indian butter tree.

Bassic acid=Stearic acid, *q.v.*

Bassinet, (bas-si-net'). [The French word.] =Ranunculus: from the shape of the flower, like a small basin.

Basso-relievo, (bas-so-rē-lē'vo). Sculpture in which the figures are detached in only a small degree.

Bassorin, (bas'so-rin). [Bassora gum.]=Salep =Tragacanth=$xC_6H_{10}O_5$=Mucilage: a gum found in many seeds.

Bass-relief, (bă-rē-lēf'). [F. *bas*, low; *relief*, raised work.]=Basso-relievo: in sculpture, figures which do not stand out far from the surface.

Bastion, (bast-yun). [The French name.] A projecting portion of a fortified inclosure.



A, Bastion.

Bastite, (bas'tīt). [Basti, in Hartz Mountains.] A green mineral, chiefly silicate of magnesium and iron.

Bast-tree, (bast). [*Bæst*, the A.-S. name]= Lime tree=Tilia Europæa: inner bark used for matting.

Basyl, (bās'il). [Gk. *basis*, base; *hyle*, material.]=Base: the electro-positive ingredient of any chemical compound, usually either a metal or a substance equivalent to it.

Basylous, (bā'sil-ous). [Base, *q.v.*]=Base-like: fulfilling the functions, or having the properties, of a base.

Bat, (bat). [Sc. *backe*, bird.]=Cheiroptera = Vespertilio: a mouse-like animal, with membranes connecting its front legs enabling it to fly. Besides this there are—*Lyre B.* = Megaderma lyra. *Bulldog B.*=Molossus longicaudatus. *Long-eared B.*=Galeopithecus.


Bat.

Batara, (ba-tā'ra). A name for Bush-shrikes =Thamnophilus.

Batatas, (ba-tā'tas). [The Malay name.] A plant belonging to Convolvulaceæ=Convolvulus batatas, the root of which is edible. *B. edulis*=Sweet potato.

Bath-bird=Vanellus cristatus: a bird of the plover kind.

Bath-metal. An alloy of brass with zinc.

Bathstone. [Bath, in west of England.]= Great Oolite freestone: a shelly limestone much used for building: one of the great Oolite strata.

Bathybios, (bath'ib-i-os). [Gk. *bathys*, deep; *bios*, life.] Mere specks of living gelatinous matter, found at bottom of Atlantic, often in large sheets of amorphous protoplasm. "Organisms without organs," formed by Hæckel into a class of Rhizopoda, under the name of Monera.

Bathygnathus, (bath-yg-nā'thus). [Gk. *bathys*, deep; *gnathos*, jaw.] A fossil reptile. *B. borealus*, found in New Red Sandstone of N. America.

Bathymetrical zones, (bath-ī-met'ri-kal). [Gk. *bathys*, deep; *metron*, measure.] According to depth, comprising littoral, sea-weed, and deep sea regions.

Bathyptilum, (bath-ip'ti-lum). [Gk. *bathys*, deep.] *B. Carpenteri*, a remarkable sea-pen found at bottom of N. Atlantic in 650 fathoms, and formed into a new genus.

Batides, (bat'i-dēz). [Gk. *batis*, thornback, a fish.]=Rays, &c.: fishes forming a sub-division of Plagiostomi.

Batikin, (bat'i-kin). [Native name.]=Entomyza cyanotis=Blue-faced honey eater: a bird living in the nest of another bird.

Batrachia, (bat-rā'ki-a). [Gk. *batrachos*, frog.] =Frogs and Toads: animals forming a division of Amphibia, *q.v.*

Batrachians, (ba-trā'ki-anz).=Batrachia, *q.v.*

Batrachite, (bat'ra-kīt). [Gk. *batrachos*, frog.] A mineral of a greenish colour, somewhat resembling a frog; chiefly a silicate of lime and magnesia, a variety of olivine.

Batracholites, (ba-tra'ko-lits). [Gk. *batrachos*, frog; *lithos*, stone.] Fossil remains of frog-like animals, found in Tertiary strata.

Batrachopus, (ba-trā'ko-pus). Fossil foot-prints of frog-like animals.

Batrachospermeæ, (ba-trā-ko-sper'me-ē). [*Batrachos*, frog; *sperma*, seed.] Plants belonging to Algae, the fronds of which have some resemblance to the ova of frogs.

Batrichnis, (bat-rik'nis). [Gk. *batrachos*, frog; *ichnos*, footprint.] Used for footprints of batrachian animals found in New Red Sandstone.

Battalion, (bat-tal'ion). [*Bataillon*, the French name.] A division of an infantry regiment, usually numbering about 1000 men.

Battardeau, (bat-ar-dō'). [The French word.] A wall built across a ditch, having in it a sluice gate.

Battens, (bat'nz). [F. *baton*, a stick.] Lengths of wood, 7 in. wide, used for flooring, &c.

Batter, (bat'ter). [F. *batir*, to build.] The build of a wall that is not perpendicular to its base. *Straight B.*, when the slope is straight. *Curved B.*, when the slope is curved.

Battering walls. Sloping walls, intended to resist side pressure, as in reservoirs, &c.

Battery, (bat'ter-i). [*Batterie*, the French name.] 1. A number of cannon; especially when placed in position. 2. A number of cells or jars for generating or accumulating electricity. *Bunsen's B.*=Grove's B., the platinum being replaced by carbon. *Bunsen's New B.*, with Zn and C in the same cell, in a mixture of sulphuric and chromic acids. *Daniell's B.*, a constant battery: zinc and copper in sulphate of copper solution. *Grove's B.*, a powerful battery: zinc in sulphuric acid, and platinum with nitric acid to absorb the evolved hydrogen. *Secondary B.*, a number of pieces of metal, such as platinum, separated by pieces of moistened cloth, which, after being connected with an active battery for some time, become charged, and act as an independent battery. *Magnetic B.*, a number of magnets arranged to act in unison. *Thermo-electric B.*, a number of thermo-electric couples, arranged in a continuous series.

Battery, chemical action of. The origin of the galvanic current. *Intensity of C. A.*= Intensity of current. *Quantity of C. A* = =Quantity of current.

Batting machine=Blower=Scutcher. A machine used in spinning.

Battlement, (bat'l-ment). [F. *bastille*, fortress.]=The wall of a parapet, usually with openings.

Baudisserite, (bau-dis'ser-īt). A variety of magnesite, *q.v.*

Bauhinia, (baw-in'i-a). [M. Bauhin.] A plant, usually twining, belonging to Leguminoseæ. *B. porruta*=Mountain ebony.

Baulite, (baw'līt). [Baulaberg, Iceland.]= Krablite: a mineral, chiefly silicate of aluminium.

Bauxite, (bō'zit). [Baux, in France.] A mineral, chiefly a compound of alumina and ferric oxide.

Bavin, (bā'vin). Impure and nodular limestone and shale.

Bay, (bā). [F. *baie*.]=Laurel tree: a tree belonging to Lauraceæ. *Dwarf-bay*=Daphne laureola.

Bayonet, (bā'yon-et). [Bayonne, where first made.] A sharp weapon of attack, fitted to the muzzle of a musket or rifle.

Bay salt, (bā'sawlt). [Bay or tank used in evaporation.] Salt obtained from sea-water by evaporation.

Bay window. A window projecting outwards, so as to form a bay-like recess.

Bdellium, (del'i-um). [*Bdellion*, the Greek name.] A brittle, transparent gum-resin, from Balsamodendron Africanum, &c., somewhat resembling myrrh.

Beads (specific gravity). Beads of different densities used to ascertain the specific gravity of a liquid, by the density of the bead which just floats in it.

Beadlet, (bēd'let) = Actinia mesembryanthemum. A sea anemone.

Beagle, (bē-gl). [Gael. *beag*, small.] A small hound.

Beak, (bēk). [*Bec*, the Gaelic name.] 1. A small fillet. 2. A horny modification of the epidermis on the outside of the muzzle or jaws, as in birds.

Beak-head, (bēk'hed). A platform on the deck of a ship at the fore end.

Beam, (bēm). [A.-S. *beam*, tree or post.] 1. A strong piece of timber. 2. A ray of light. *B. compass* · a compass, one of whose points slides along a beam; used for describing large circles. *B. engine* · an engine having a beam, by the motions of which power can be transmitted. *B. tree*=Pyrus aria.

Bean, (bēn). [The A.-S. name.] A form of fruit, of which the pea and bean are examples; also a common name for several plants bearing such fruits. *B. capers*=Zygophyllaceæ. *Buck B.*=Bog-bean=Menyanthes. *St. Ignatius' B.*=Seeds of Ignatia amara. *Tonka B.* Dipterix odorata. *Garden B.* = Faba vulgaris = Vicia faba. *French B.* = Phaseolus vulgaris. *B. copper* = Granulated copper. *B. goose*=Anser segetum.

Bear, (bār). [*Bera*, the A.-S. name.] 1.= Ursus: a large omnivorous hybernating quadruped, belonging to Plantigrade carnivora. *Black B.*=Ursus Americanus. *Brown B.*= Ursus arctos. *Sea B.*=Phoca ursina. *Cave B.*=Ursus spelæus. 2. The name of two Northern constellations. *Greater B.*=Ursa Major. *Lesser B.*=Ursa Minor. 3. A local name in N. England for a vari ty of barley.

Bear's-foot=Helleborus, *q.v.*

Bearberry, (bār'ber-ri)=Arctostaphylos uva-ursi, a wild trailing plant, fruit eaten by bears, belonging to Arbuteæ.

Bear-bind=Convolvulus arvensis: a trailing plant, used for binding barley sheaves.

Beard, (bērd). [The A.-S. name.] 1. Hairy appendages on the face, possessed by men, orangs, Diana monkeys, and Sakis. 2. *Greater forked B.*=Blennius phycis: a fish belonging to Gobioidæ.

Beardie, (bērdi)=Cobitis barbatula = Loche: a small fish belonging to Cyprinidæ.

Bearding-line. The line of intersection of the surface of keel, dead-wood, stem, and stern-post of a ship, with the outer surface of the frame timbers.

Beard-like lichen=Usnea florida.
Bearings, (bâr'ingz). [To bear.] 1. Planes, cylinders, spheres, conoids, &c., usually of metal; used to transfer motion from one part of a machine to another, and to direct the motion of the pieces supported. 2. The direction of a line: used in sailing and surveying.
Beatricea, (bē-a-trī'si-a). A fossil: now supposed to be the tube of an annelide animal; at first mistaken for a large fern; found in Silurian rocks.
Beats, (bēts). 1. *Beats in music,* the alternate strengthening and weakening of one tone by another. 2. *Beats of the heart,* caused by the resistance in the arteries to the passage of blood from the heart.
Beaumaris shark=Lamna cornubica.
Beaume's hydrometer. A glass tube, containing some mercury, and having a graduated stem, used to test the specific gravity of a liquid.
Beaumontite, (bō'mon-tīt). 1. A mineral, chiefly silicate of aluminium and lime: probably=Stilbite. 2. A variety of Malachite.
Beaver, (bē'ver). [*Befer,* the A.-S. name.] 1. Castor fiber: a graminivorous amphibious quadruped, living in families, in houses made of wood, mud, &c. 2. The front movable portion of a helmet, from the French name *baviere.*
Beaver-tree, (bē'ver-trē). [Bark eaten by beavers.] = Magnolia glauca = White laurel =Sweet bay, a tree common in American swamps.
Bebiric acid, (be'bi-rik). [*Bibiru,* the native name.] Found in bark of Nectandra Rodiei, or Bibiru, of Guiana.
Bebirine, (be'bi-rīn). [*Bibiru,* the native name, in Guiana.]=$C_{38}H_{21}NO_6$: an alkaloid obtained from the bark of Nectandra.
Beccafico, (bek-a-fē'kō). [The Italian name.] = Fig-eater = Sylvia, a bird belonging to Insessores.
Becker, (be'ker). A fish=Sparus pagrus, *q v.*
Becquerel's thermo-electric battery, of artificial sulphuret of copper and copper.
Bed, (bed). [The A.-S. name.] In geology, a thick stratum of uniform materials; properly confined to the junction of two such strata.
Bedding, (bed'ding). [Bed, *q.v.*] The determination of the dip and character of one stratum by the stratum upon which it rests. *Cross B.*=False B.=Cross stratification.
Bedstraw, (bed'straw) = Galium, a common herb, used in cheesemaking and for dyeing, belonging to Galiaceæ.
Bee, (bē). [*Beo,* the A.-S. name.]=Apis: an insect living in societies, building dwellings, and storing up honey; belonging to Hymenoptera.
Bee-eater, (bē'ē-ter) = Merops, a bird, living on bees, wasps, &c., belonging to Insessores.
Beech, (bēch). [*Bece,* the A.-S. name.] = Fagus: a large forest tree, the wood of which is hard and much used, belonging to Corylaceæ.
Beef-eater, (bēf'ē-ter). [Beef-eater.] = Buphaga: a bird that feeds on insects, which it finds in the skins of oxen; at first supposed to feed on the oxen's flesh.
Beefwoods, (bēf'wŏŏdz). [The Australian name.] = Casuarinaceæ: exogen trees approximating to endogens.
Bee-hive, (bē'hīv). [From the form.]=Præsepe, in Cancer, *q.v.*
Beekite, (bē'kīt or bē-kī'te). [Dr. Beeke.] Peeble-like varieties of chalcedony, found in New Red Sandstone rocks.
Beer, (bēr). [*Beor,* the A.-S. name.]=Wine of grain: obtained from malt.
Beer and Madler's map of the Moon, *in which* the surface is divided by triangulation.
Bees-wax, (bēz'waks). [Bee and Wax, *q.v.*] An unctuos yellow animal secretion, composed of myricin, cerin, and ceroleın: produced chiefly by bees.
Beet, (bēt). [Celtic, *bett,* red.] = Beta: an herb having a large succulent red root, much used as food for cattle, and for the extraction of its sugar, belonging to Chenopodiaceæ.
Beetle, (bē'tl). [*Bytel,* the A.-S. name.] = Coleoptera; also a sub-division of Coleoptera: insects having a horny covering.
Beetroot sugar. Obtained in a crystalline form from the juice of the roots of beet, almost identical with ordinary cane sugar.
Begonia, (be-gō'ni-a). [M. Begon.] The type of Begoniaceæ, *q.v.*: will grow from a very small portion of a leaf.
Begoniaceæ, (be-gō-ni-ā'se-ē) [*Begonia,* the typical plant.]=Begoniads: S American and Indian shrubs and herbs, belonging to Cucurbitales: generally with succulent stems and fleshy leaves.
Beimbing=Averrhoa bilimbi: an East Indian plant, with cucumber-like fruit.
Belemnites, (bel'em-nītz). [Gk. *belemnon,* a dart.] Conical fossils, remains of dibranchiate cephalopodous molluscs, abundant in Chalk, Oolite, and Lias.
Belemnoteuthis, (be-lem-no-tū'this). [Gk. *belemnon,* dart; *teuthis,* cuttle-fish.] A cuttle-fish, known by well preserved fossil remains.
Belemnoziphius, (be-lem-no-zif'i-us). [Gk. *belemnon,* dart; *xiphos,* sword.] A dolphin-like animal, known only by fossil remains in Tertiary rocks.
Belfry, (bel'fri). [O.F. *belfroit.*] 1. The portion of a steeple containing the bells. 2. Any building erected especially for a peal of bells.
Bell's cement, made of shell-lac and gold size.
Bell-bird=Chasmorhynchus niveus: an Australian bird, belonging to the Honey-eaters, whose tinkling voice can be heard two or three miles off.
Bell-crank lever. A lever, the two arms of which are inclined so as to form a bent lever: used to move small pieces of machinery.
Bell-flower=Campanula: also used for other plants, belonging to Campanulaceæ, the flowers of which are bell-shaped.
Bell-gable=Bell turret, a small belfry, of the gable form.
Bell metal. A variety of bronze: an alloy of copper and tin, used for bells. *B. ore,* containing tin and copper pyrites.

Belladonine. An alkaloid obtained from belladonna.

Belladonna, (bel-la-don'na) [It. *belladonna*, fair lady.]=Atropa belladonna: a poisonous plant, belonging to Solanaceæ, having a fruit resembling the cherry.

Bellatrix, (bel-lā'triks). [*Bellatrix*, the Latin name.]=γ Orionis, the north-western star in the quadrilateral of Orion.

Bellerophon, (bel-ler'o-fon). [Classical.] An animal belonging to Heteropoda, known only by shells found in Palæozoic rocks.

Bellis, (bel'lis). [L. *bellus*, pretty.] 1. Daisy, a small wild flower, belonging to Compositæ. 2. Sea-daisy, belonging to Actiniæ, a sea-anemone.

Bellona, (bel-lō'na). [Classical.] One of the Asteroids, No. 28.

Bellows, (bel'lōz). [*Bælg*, the A.-S. name.] Applied to any machine for the purpose of forcing air through a fire.

Bellows-fish, (bel'lows-fish). [From its form.] =Centriscus scolopax: an Acanthopterygian fish.

Bell-worts, (bell'wurtz). [Form of flowers.]= Campanulaceæ: herbs and shrubs with bell-shaped flowers.

Belodon, (bel'o-don). [Gk. *belos*, a dart; *odous*, a tooth]. An extinct reptile of the crocodile kind, fossil remains of which are found in Triassic strata.

Belt, (belt). [The A.-S. name.] *B. of Jupiter:* two streaks of comparative darkness, one on either side of the planet's equator. *B. of Saturn:* appear to be of the same kind as in Jupiter. *B. of Orion:* three bright stars in the constellation Orion. *v.* Warrior's belt.

Beluga, (bē-lōō'ga). [*Bieluga*, the Russian name.] A cetacean animal.

Belvedere, (bel've-dēr). [It. *belvedere*, a fine sight.] A small building, sometimes on the roof of a palace, &c., intended as a kind of observatory or pleasure seat.

Belvisiaceæ, (bel-vi-si-ā'se-ē). [M. Beauvois, its discoverer.]=Napoleon-worts: bushes of tropical Africa, with soft wood and berry-like fruit, belonging to Myrtales.

Bembidiidæ, (bem-bi-dī'idē). [Bembidium.] A family of minute beetles, belonging to Geodephaga.

Bembridge series. [Bembridge, in Isle of Wight.] The uppermost beds of Upper Eocene strata, in which are found remains of the Palæotherium.

Bends, (bendz). [A.-S. *benden*, to curve.] The widest part of a ship. *Anchor B.*, the fastening of a cable to an anchor.

Beneden's classification of animals. Hypocotyledones=Vertebrates. Epicotyledones= Insects, Myriapoda, Crustacea, &c. Allocotyledones=Mollusca, worms, polyps, infusoria, &c.

Benetnasch. The Arabic name of the star η Ursae Majoris; also called Alkaid, *q.v.*

Bengal hemp = Crotalaria juncea, a plant belonging to Fabaceæ.

Bengal quince=Ægle marmelos: a fragrant plant, belonging to Aurantiaceæ, with an orange-like fruit.

Benic acid, (ben'ik). [Oil of ben.] Name given to two fatty acids obtained from oil of ben. 1. Benostearic acid = $C_{22}H_{44}O_2$. 2. Benomargaric acid=$C_{15}H_{30}O_2$.

Benjamin tree=Ficus benjamina, *q.v.;* also =Laurus benzoin, *q.v.*

Ben-nut tree=Moringa, *q.v.*

Ben-oil tree=Moringa, *q.v.*

Bennett's electroscope=Gold-leaf electroscope: two strips of gold leaf, usually enclosed in a glass shade, in metallic communication with a knob or plate at the top, which show the proximity of any electrified body by diverging.

Benolic acid=$C_{22}H_{40}O_2$: obtained from erucic acid.

Bent, (bent)=Agrostis: a grass plant, belonging to Graminaceæ.

Bentham and Hooker's classification of plants.

- Dicotyledones.
  - Angiospermeæ.
    - Polypetalæ.
      - Thalamifloræ.
      - Discifloræ.
      - Calycifloræ.
    - Monopetalæ
    - Monochlamydeæ.
    - Achlamydeæ.
- Monocotyledones.
  - Petaloideæ.
  - Glumaceæ.
- Acotyledones.
  - Acrogens.
  - Thallogens.

Benzaldide, (ben'zal-dīd). [Benzoyl, *q.v.*]= Hydride of benzoyl, *q.v.*

Benzamic acid, (ben'za-mik). [Benzoyl and Amides, *q.v.*] = Amido-benzoic acid = Oxy-benzamic acid=$C_7H_7NO_2$: a crystalline substance obtained from benzoic acid.

Benzamide, (ben'za-mīd). [*Benz*oyl and *Amide*, *q.v.*]=C_7H_7NO: a primary monamide=Ammonia, in which one atom of hydrogen is exchanged for one of benzoyl, forming a crystalline fusible substance.

Benzamil, (ben'za-mil). [Benzoyl.] = $C_{28}H_{20}N_2O_2$: a crystalline substance obtained from oil of bitter almonds.

Benzanilide, (ben-zan'i-līd). [Benzoyl and Aniline, *q.v.*]=$C_{13}H_{11}NO$=Aniline, in which one atom of hydrogen is replaced by one of benzoyl=Phenylbenzamide.

Benzene, (ben'zēn). [Benzol, *q v.*]=C_6H_6= Pure benzol, *q.v.*=Bicarburet of hydrogen; also called Benzine and Hydride of phenyl.

Benzene sulphuric acid = Phenylsulphurous acid=$C_6H_6SO_3$: a compound of benzene and sulphuric acid.

Benzhydramide, (benz-hī'dra-mīd). [*Benz*oyl, *Hydr*ogen, and *Amide*, *q.v.*]=Cyanazobenzoyl hydride = $C_{22}H_{18}N_2O$. A crystalline substance obtained from essence of bitter almonds.

Benzhydrol, (benz-hīd'rol). [Benzoyl and Hydrogen, *q.v.*] 1. A camphor obtained from oil of cassia. 2. A constituent of the above; the other constituent being benzhydrolic acid.

Benzidam, (ben'zi-dam). [Benzol, *q.v.*]=Phenylamine=Aniline, *q.v.*: so named from its being obtained from nitrobenzol.

Benzidine, (ben'zi-dīn). [Benzene, *q.v.*]

$=C_{12}H_{12}N_2$: an alkaline substance obtained from azobenzone.

Benzil, (ben'zil). [Benzoin, *q.v.*; Gk. *hyle*, material.] $=C_{14}H_{10}O_2=$ Benzile: a yellow, crystalline, inflammable substance obtained from benzoin.

Benzilam, (ben'zi-lam). [*Benzil* and *am*monia.] $=C_{14}H_9N$: a crystalline substance obtained by the action of ammonia on benzil.

Benzilic acid, (ben'zi-lik). [Benzile, *q.v.*]= Stilbylic acid=Stilbic acid=$C_{14}H_{12}O_3$: a crystalline acid substance from potassic bensilate.

Benzilimide, (ben-zil'i-mīd). [Benzil and Ammonia.]=$C_{28}H_{22}N_2O_2$=Benzilim: a crystalline compound derived from benzil and ammonia.

Benzimic acid, (ben'zi-mik). [Benzimide, *q.v.*] A crystalline acid substance obtained by acting on oil of bitter almonds with ammonia.

Benzimide, (ben'zi-mīd). [Benzoyl and Amide, *q.v.*]=$C_{23}H_{18}N_2O_2$=Hydride of cyanobenzoyl, a crystallisable substance obtained from oil of bitter almonds.

Benzine, (ben'zin).=Benzol, *q.v.*

Benzoates, (ben'zo-āts). [Benzoic acid, *q.v.*]= $MC_7H_5O_2$: compounds of benzoic acid and a base.

Benzoen, (ben'zo-en)=Toluol, *q.v.*

Benzoeretic acid=Parabenzoic acid, *q.v.*

Benzoglycol=$C_7H_8O_2$=Oil of bitter almonds and water.

Benzoglycolic acid=$HC_9H_7O_4$: a crystalline compound of benzoic and glycolic acids.

Benzohelicin=$C_{20}H_{20}O_8$: a crystalline substance obtained by dissolving populin in nitric acid.

Benzoic acid, (ben-zō'ik). [Benzoin, *q.v.*]= Water in which one atom of H is exchanged for one of benzoyl=$C_7H_6O_2$=Benzoyl hydrate=HBzO: a crystalline acid obtained from benzoin; also called flowers of benzoin: found in many resins and balsams.

Benzoic alcohol=Benzyl A.=C_7H_8O: an oily liquid obtained from bitter almonds.

Benzoic anhydride = $C_{14}H_{10}O_3$ = Water in which both atoms of H are exchanged for benzoyl; also called benzoate of benzoyl.

Benzoicin, (ben-zō'i-sin). [Benzoyl, *q.v.*]= Benzoate of Glycyl: glycerin, in which one or three atoms of H are exchanged for one of benzoyl. *Monobenzoicin*=$C_{10}H_{12}O_4$. *Tribenzoicin*=$C_{24}H_{20}O_6$.

Benzoin, (benz'ō-in). [*Benzoah*, the Arabic name.] 1.=$C_{14}H_{12}O_2$: a fragrant resin obtained from Styrax benzoin. 2. *Laurus benzoin*, a plant belonging to Lauraceæ.

Benzoine, (benz'o-īn). [Benzoyl, *q.v.*]=$C_{14}H_{12}O_2$: a crystalline substance obtained from benzol. The same as Benzoin.

Benzol, (ben'zōl). [Benzoin, *q.v.*]=Benzine= Phene=Bicarburet of hydrogen=Phenyl hydride=C_6H_6: one of the aromatic hydrocarbons: a colourless liquid much used as a solvent for wax, fats, caoutchouc, &c.; when quite pure benzol is called benzene.

Benzolactic acid, (ben-zo-lak'tik). [Benzol and Lactic Acid, *q.v.*]=$C_{10}H_{10}O_4$: lactic acid in which one atom of hydrogen is replaced by benzoyl.

Benzoline, (ben'zo-lēn). [Benzol, *q.v.*]=Amarine=$C_{21}H_{18}N_2$: an alkaline compound obtained by the action of ammonia on benzol hydride.

Benzone, (ben'zōn). [Benzoic, *q.v.*]=Benzophenone=$C_6H_5C_7H_5O$: obtained from benzoic acid.

Benzo-nitrile, (ben-zo-nī'trīl). [Benzol and Nitrile, *q.v.*]=C_7H_5N: a colourless odorous oil, the vapour of which is inflammable.

Benzo-sulphuric acid=$C_7H_6SO_5$: compounded of strong sulphuric acid and benzoic acid.

Benzoyl, (ben'zo-il). [Benzoin, *q.v.*; Gk. *hyle*, material.]=Bz=C_7H_5O=The supposed radicle of benzoic acid=Radicle of bitter almonds.

Benzureide, (ben-zū're-īd). [*Benzoyl* and *Ureide*, *q.v.*]=Urea benzoate−H_2O=$H_8C_8O_2N_2$: a crystalline powder, compounded of benzoyl and urea.

Benzyl, (ben'zīl). [Benzoyl, *q.v.*; Gk. *ule*, material.]=C_7H_7=Tolyl=Toluenyl: the supposed radicle of the benzoic series of ethers.

Benzylamine: C_7H_9N: a crystalline substance =Toluidine, *q.v.*

Benzylene, (ben'zi-lēn). [Benzyl, *q.v.*]=C_7H_6: one of the acetylene series of hydrocarbons: an hypothetic radicle.

Benzylia, (ben-zī'li-a). [Benzyl, *q.v.*]=Phenylmethylia=C_7H_9N=$CH_3{\cdot}C_6H_5$.HN: a volatile base obtained by the action of ammonia on benzyl chloride.

Beraunite. [Beraun, in Bohemia.] A mineral, chiefly phosphate of iron.

Berbers. An African people.

Berberales, (bẹr'bẹr-ālz). [Berberis, *q.v.*] Plants with very small embryos, and much fleshy albumen, forming a sub-division of Hypogynous exogens.

Berberidaceæ, (bẹr-bẹr-i-dā'se-ē). [Berberis, *q.v.*]=Berberids: herbs and shrubs, sometimes spiny, belonging to Berberales.

Berberine, (bẹr'bẹr-īn).=$C_{20}H_{17}NO_4$: an alkaloid obtained from Berberis.

Berberis, (bẹr'bẹr-is). [The Arabic name]= Barberry: a shrub from which a yellow dye and oxalic acid are extracted.

Berberry, (bẹr'bẹr-ri).=Barberry=Berberis, *q.v.*

Berengelite, (bẹr-en-je'līt). [Berengela, in Peru.]=Berengela resin=$C_{20}H_{30}O_4$: a pitch-like mineral found in Peru, used for caulking vessels.

Berg (bẹrg). [Sw. *berg*, mountain.]=Iceberg, *q.v.*

Bergamot, (bẹr'ga-mot). [*Bergamotte*, the French word.]=Citrus bergamia.

Bergamot camphor = Bergaptene: obtained from oil of bergamot.

Bergamot mint=Mentha odorata: a plant belonging to Lamiaceæ.

Bergamot oil. A volatile oil obtained from fruit of Citrus bergamia.

Bergamotte, oil of, (berg'ā-mot). [*Bergamotte*, the French name.]=$3C_{10}H_{16}$: obtained from the rind of the bergamotte or lime fruit.

Bergamint, (bẹr'ga-mint)=Mentha citrata.

Bergaptene, (bẹr-gap'tēn). [Bergamot, *q.v.*] =C_3HO: a camphor-like substance obtained from essence of Bergamot.

Bergmehl, (berg-māl.) [The Swedish name.] =Mountain meal: a fine earth, found in Sweden, containing remains of Diatomaceæ, and said to be nutritious when mixed with flour.

Bergylt, (ber'gilt)=Sebastes norvegicus= Perca marina=Norway haddock.

Bernicle goose=Clakis=Anser bernicla: visits England only in autumn and winter.

Berme. A terrace at the foot of the outer side of a parapet.

Bermuda cedar=Juniperus bermudiana.

Beroë, (ber'o-e). [Classical.] A small phosphoric marine animal belonging to Actinozoa.

Berry, (ber'ri). [*Berie,* the A.-S. name.] A fruit, such as the gooseberry, which has seeds loose in the pulp.

Berry-bearing alder=Rhamnus frangula: a plant belonging to Rhamnaceæ.

Bertsch's machine. An electrical machine, consisting of a plate of ebonite electrified by induction, and fittings for the production of sparks when the plate is made to revolve.

Beryl, (ber'il). [*Beryllus,* the Latin name] =Silicate of aluminium and glucinum: a gem of a rich green colour, which, when very rich in colour, is called an emerald: a mineral of the topaz group.

Beryllium, (be-ril'ium). [Beryl, *q.v.*] Another name for Glucinum, *q.v.*

Berzelian nomenclature, (ber-zē'li-an). [Berzelius, a Swedish chemist] Potassic sulphate for sulphate of potassium; sodic nitrate for nitrate of sodium, &c., &c., the name of the base being used first as an adjective, and that of the acid as a noun.

Berzelian notation. H_2O for water, SO_3 for sulphuric acid, &c., &c., the given substance being represented by the initials of its constituents, and the number of atoms of each expressed by small numerals.

Berzelianite, (ber-zēl'i-a-nīt). [M. Berzelius.] A mineral, chiefly sulphide.

Berzelite, (ber'ze-lit). [M. Berzelius.]= Kuhnite: an oxide of arsenic, lime, and magnesia: also used for Mendipite, Petalite, and Thorite.

Bessemer flame, (bes'se-mer). [Mr. Bessemer, the inventor] The flame given out during the Bessemer process: at first yellow and slightly luminous, afterwards a long and extremely luminous body of flame.

Bessemer process. A substitute for puddling and refining, by which cast iron is converted into cast steel, by the removal of all unnecessary carbon; cold air is forced through molten iron until all the carbon is burnt.

Bessemer ship: in which a saloon is designed to remain horizontal even in a rough sea, being supported on telescopic pneumatic tubes.

Beta, (bē-ta). [1. β the second letter in the Greek alphabet; 2. Celt. *bett,* red; the colour of the root.] 1. Used to represent the second star of each constellation. 2.=Beet: a plant with large succulent root, belonging to Chenopodiaceæ.

Betaceæ, (bē-tā'se-ē). [Beta, *q.v.*] An order of plants, of which the beet is the type: now included in Chenopodiaceæ.

Beta-orcein. A homologue of Orcein, *q.v.*, obtained from usnic acid.

Beta-orsellic acid. A variety of orsellic acid, *q.v.*

Betelgeuse=Betelgeux=*a* Orionis: a ruddy star containing no hydrogen, the N.E star in the quadrilateral of Orion: once red, now orange.

Betel nut, (bēt-l) [F. *betel.*] A compound of areca nut and betel leaves; also=Fruit of piper betel, a plant belonging to Piperaceæ, the leaves of which are used with the areca nut.

Betel nut palm=Areca catechu, the nuts of which are narcotic.

Beton, (bē-ton). [The French name.] A hydraulic cement.

Betonica, (be-ton'i-ka)=Betony, *q.v.*

Betony, (bet'on-i) [L. *betonica;* or C. *ben,* head; *ton,* good]=Betonica=Stachy's betonica: an herb belonging to Fabaceæ.

Bettong, (bet'tong) [Native Australian name.] =Jerboa: a small nocturnal kangaroo, building a nest on the ground.

Betula, (bet'u-la). [The Latin name]=Birch: a tree or shrub belonging to Betulaceæ.

Betulaceæ, (bet-u-lā'se-ē). [Betula, *q.v.*]= Birch-worts: shrubs and trees belonging to Amentales, including the birch and alder.

Betulin, (bet'u-lin). [Betula, *q.v.*] $C_{40}H_{61}O_3$: a resinoid substance obtained from the bark of the birch tree.

Beudantite. A mineral, chiefly sulphate of lead and iron.

Bevel wheels. Two intersecting wheels revolving in different planes.

Beyrichite, (bī'rik-it) [M. Beyrich.]

Bezetta. A blue dye, obtained from plants belonging to Chrozophora and Croton.

Bezoar stones, (bē'zōr) [The Persian name] Concretions, consisting of several concentric waxy layers, found in the stomachs of some goats and other ruminating animals.

Bezoaric acid=Ellagic acid: so named from being also found in bezoar stones.

Bhotias. An Asiatic people.

Bi, (bī) [L. *bis,* twice] A prefix, usually meaning two: as bimana, two handed; bifacial, with two faces.

Biauriculate animals, (bī-âw-rik'ū-lāt). [L. *bis,* twice, Auricle, *q.v.*] Term used by Oken for Acephala.

Biaxial, (bī-ak'si-al). [L. *bis,* twice; Axis, *q.v.*] Having two axes. *B. crystals:* crystals having two optic axes, including the monoclinic, trimetric, and triclinic crystals.

Bib, (bib). Whiting pout: a fish=Gadus lusus, *q.v.*

Bibasic, (bī-bā'sik). [L. *bis,* twice; Base, *q.v.*] Having two atoms of hydrogen, which in combination are replaced by two equivalents of a base.

Bicarbonate, (bī-kar-bo-nāt). [L. *bis,* twice; Carbonate] A salt containing two equivalents of carbonic acid to one of the base.

Bicardial animals, (bī-kar'di-al) [L *bis,* twice: *cardiacus,* of the stomach.] Oken's term for Cephalopoda.

Biceps muscle, (bī'seps). [L. *bis*, twice; *caput*, head.] Connecting the fore-arm and shoulder bone, and bending the arm at the elbow: named from being connected with the shoulder bone by two tendons.

Bichloride, (bī-klō'rīd). [L. *bis*, twice; Chloride, *q.v.*] Compounds containing two equivalents of chlorine to one of a base.

Bichromate, (bī-krō'māt). [L. *bis*, twice; Chromate, *q.v.*] Compounds containing two equivalents of chromic acid to one of a base.

Bicipetal groove, (bī-sip'it-al). [Biceps, *q.v.*] A depression in the humerus, in which the tendon of the biceps muscle is inserted.

Bicuspid, (bī-kus'pid). [L. *bis*, twice; *cuspis*, point.] Twice pointed. *B. teeth* = teeth having two points: outside the canine teeth.

Bidens, (bī'denz). [L. *bidens*, two teeth.]= Bur-marigold, an herb belonging to Asteraceæ, having two prominent bristles.

Biela's comet. [M. Biela, the discoverer.] A short period comet, returning every 6½ years, came near the earth 27th Nov. 1872.

Biennials, (bī-en'ni-alz). [L. *biennis*, lasting two years.] Plants producing seed only at the end of their second year.

Bi-equivalent, (bī-e-kwiv'a-lent). [L. *bis*, twice; and Equivalent.]=Divalent: equivalent to two atoms of hydrogen, or to two units of any standard.

Bifilar suspension, (bī-fī'lar). [L. *bis*, twice; *filum*, thread.] Suspension by two threads.

Bifurculapes, (bī-fur-kū'la-pēz). [L. *bis*, twice; *furcula*, a little fork: *pes*, foot.] An invertebrate animal known only by its tracks, probably a crustacean.

Bigeminate, (bī-jem'in-āt). [*Bigemmis*, the Latin name.] Each division having two similar leaflets.

Bignonia, (big-nō'nia). [M. Bignon.]=Trumpet flower: a climbing shrub, belonging to Bignoniaceæ.

Bignoniaceæ, (big-nō-ni-ā'se-ē). [Bignonia, *q.v.*]=Bignoniads: herbs, shrubs, and trees, chiefly tropical, belonging to Bignonales.

Bignonales, (big'nō-nālz). [Bignonia, *q.v.*] A sub-division of perigynous exogens, of which bignonia is the type.

Bikh, (bik). [The Indian name.]=Aconitum ferox, of Nepaul; a very poisonous plant.

Bilabiate, (bī-lab'i-āt). [L. *bis*, twice; *labium*, lip.] Two-lipped.

Bilander, (bi-lan'der). [*By*, near; Land.] A vessel with fore and aft mainsail, used chiefly for traffic near land.

Bilberry, (bil'ber-ri). [A.-S. *bleo*, blue; and Berry.] Fruit of Vaccinium myrtillus.

Bildstein, (bild'stīn). [The German name.] =Agalmatolite, *q.v.*

Bile, (bīl). [*Bilis*, the Latin name.] A secretion formed by the liver from the blood: a bitter, yellowish, alkaline fluid, containing the solids bilin and cholesterine. *Crystallised B.*: a mixture of potassic and sodic glycocholates.

Bilge, (bilj)=Builge, *q.v.*

Bilge and feed pumps. Pumps used to draw off the bilge water, and feed the boilers with water.

Bilhoolas. An American race.

Biliary calculi. Stones found in the gall bladder.

Bilifuscin, (bī-li-fū'sin). [Bile, *q.v.*; and L. *fuscus*, dark.]=$C_{16}H_{20}N_2O_4$: a brown colouring matter in the bile.

Bilimbi=Averrhoa bilimbi: an East Indian plant, with edible fruit and sensitive leaves.

Bilin, (bil-in). [Bile, *q.v.*] The solid portion of bile: a resinous compound of carbon, hydrogen, oxygen, nitrogen, and sulphur = Taurocholic and Glycocholic acids.

Biliphein, (bil'i-fin). A brown colouring matter found in the bile.

Bilirubin, (bī-li-rū'bin). [Bile, *q.v.*; and L. *rubens*, red.]=$C_{16}H_{18}N_2O_3$: crystals of a dark red colour, found in the bile.

Biliverdin, (bī'li-ver'din). [Bile, *q.v.*; F. *vert*, green.]=A green colouring matter in the bile =$C_{16}H_{20}N_2O_5$.

Billbergia, (bil-ber'ji-a). [M. Billberg.] A plant belonging to Bromeliaceæ.

Bimaculated, (bī-mak'u-lat-ed). [L. *bis*, twice; *macula*, spot.] Spotted. *B. Sucker*=Lepidogaster bimaculatus, *q.v.* *B. Wrasse* = Labrus bimaculatus, *q.v.*

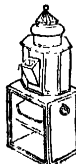
Bimana, (bī-mā'na). [L. *bis*, twice; *manus*, hand.] Two handed: applied to the human race when it is considered as a class of Mammalia.

Bimanese. An Oceanic race.

Binary, (bī'na-ri). [L. *bini*, two at a time.] Double. *B. stars:* two stars, each revolving round the other. *E.g.*, γ Delphini, α Geminorum, ξ Ursae Majoris. *B. theory of salts:* 1. That salts are compounds of a metal or other basylous radicle, with an acid or chlorous radicle. 2. That hydrated acids consist of a base and radicle, the former being hydrogen. *B. compounds:* consisting of two elements only.

Bindweed, (bīnd'wēd). [Bind and weed.] 1.=Convolvulus: twining herbs or shrubs, belonging to Convolvulaceæ. 2.=Smilax aspera: a plant belonging to Smilaceæ.

Binnacle, (bin'akl). [*Habitacle*, the French name.] A box to contain a ship's compass.



Binnacle.

Binnite, (bin'nit). [Binnenthal, in Switzerland.] A mineral, chiefly sulpharsenite of lead.

Binocular vision, (bī-no'ku-lar). By two eyes, which gives better judgment of distance than with one eye.

Binomial, (bī-nō'mi-al). [L. *bis*, twice; *nomen*, name.] *B. equation:* an equation of two terms, as $x^3=y^4$. *B. theorem:* that a binomial, or expression of two terms, may have any given power of it written at once by use of a general formula. Ex. $(a+b)^n=a^n+na^{n-1}b+\ldots\ldots+nab^{n-1}+b^n$.

Binoxide, (bī-noks'īd). [L. *bis*, twice; and Oxide, *q.v.*] An oxide, in which there are two equivalents of oxygen for one equivalent of the base. Ex. CO_2=Carbonic dioxide.

Biogenesis, (bī-ō-jen'es-is). [G. *bios*, life; *genesis*, birth.]=Biogeny: the origin of life from life only: opposed to Abiogenesis, *q.v.*

Biology, (bī-ol'o-ji). [Gk. *bios*, life; *logos*, discourse.] The science of living beings, including all vegetables and animals, divided into Morphology and Embryology

Bioplasm, (bī'o-plazm). [Gk. *bios*, life; *plasma*, formed matter.]=Protoplasm, *q.v.*

Biot's apparatus for measuring the power of rotatory polarization in liquids.

Biotin, (bī'o-tin). [M. Biot.]=Anorthite, *q.v.*

Biotite, (bi'o-tīt). [M. Biot.]=Magnesia mica: a mineral of the mica group, found in recent volcanic rocks, a silicate of alumina, magnesia, &c.

Bipes, (bī'pez). [L. *bis*, two; *pes*, foot.] 1. A reptile with two pelvic limbs or legs, but no thoracic limbs or arms: belongs to Lacertilia. 2.=Man, sometimes called Bipes implumis, to distinguish him from birds.

Biquadratic, (bi-kwad-rat'ik). [L. *bis*, twice; *quadratus*, square.] The fourth power of a numerical quantity.

Birch, (birch). [The A.-S. name]=Betula, *q.v.* A tree belonging to Betulaceæ, the timber of which is valuable for the strength and fineness of grain.

Birch-worts, (birch'wurtz). [Birch and wort, *q.v.*]=Betulaceæ, *q.v.* Trees resembling the birch.

Bird, (bird). [Birds, *q.v.*] Used as an adjective. *B. cherry*=Cerasus padus. *B. pepper*=Capsicum baccatum. *B. lime*=A fermented gluey compound, chiefly of holly-bark. *B. lice*=Mallophaga: wingless parasitic insects, chiefly found on birds. *Bird's-eye:* 1. A N. American stratum, corresponding to the Caradoc of Britain, containing many Phytopsis cellulosa, which look like eyes; 2.=Primula farinosa. *B. of prey*=Accipitres=Raptores, *q.v.* *B. bill*=Trigonella ornithopodioides. *B. foot:* 1.=Ornithopus; 2.=Euphorbia ornithopus. *B. tongue*=Ornithoglossum. *B. foot-trefoil*=Lotus.

Birds, (birdz). [*Brid*, the A.-S. name.] Vertebrate animals adapted for flying by having the fore limbs modified into wings, covered with feathers; connected with reptiles by the Archæopteryx. Classified by Latham, Blumenbach, Cuvier, Temminck, Vigors, M'Leay, Latrielle, Swainson, &c.

Bird's nest. The popular name for Monotropa, *q.v.*; also for Neottia, *q.v.*

Birds of Paradise. Birds belonging to Corvidæ, the males of which are remarkable for the beauty of their plumage: found only in New Guinea.


Bird of Paradise.

Birgus, (bir'gus)=Tree-crab: a crustacean animal, belonging to Anomura, said to be able to climb trees.

Birthwort, (birth'wurt)=Aristolochia, *q.v.*

Biscuit porcelain. Fine earthenware in a porous condition, in which any required pattern or design can be printed on it in colours, the colouring matter being readily absorbed.

Bisethyl, (bis-eth'il). [Bismuth and Ethyl, *q.v.*]=C_2H_5Bi: an organic radicle, a compound of bismuth and ethyl; also called bismuthethyl.

Bisextile. *v.* Bissextile.

Bisexual, (bi-seks'u-al). [L. *bis*, twice, Sexual, *q.v.*]=Hermaphrodite: having both sexes united.

Bishop's weed=Ægopodium, *q.v.*

Bismethyl, (bis-meth'il). [Bismuth and Ethyl, *q.v.*]=Bistriethyl, *q.v.*

Bismite, (bis'mīt). [Bismuth, *q.v.*] A mineral, chiefly oxide of bismuth.

Bismuth, (bis'muth). [*Wismuth*, the German name.]=Bi‴: a brittle metal found in quartz rock, which expands in cooling, and is diamagnetic: one of the ingredients of fusible metal. *B. glance*=Native B.-sulphide=Bi_2S_3. *B. group of minerals*, includes bismuth, bismuthinite, &c.; soft, heavy, fusible, brittle minerals. *Native B.* crystallises in hexagons, and is usually mixed with small quantities of other metals.

Bismuthethyl, (bis-muth-eth'il). [Bismuth and Ethyl, *q.v.*]=Bisethyl, *q.v.*

Bismuthic acid, (bis'muth-ik). [Bismuth, *q.v.*]=Pentoxide of bismuth, Bi_2O_5.

Bismuthinite, (bis-mū-thī'nīt). [Bismuth, *q.v.*]=Bismuthine: a mineral, chiefly sulphide of bismuth, Bi_2S_3, crystallising in rhombs; belongs to the bismuth group; also called Bismuth glance.

Bismuthite, (bis'mu-thīt). [Bismuth, *q.v.*] A sulphuretted ore of bismuth.

Bismuthyl, (bis'mu-thīl). [Bismuth, *q.v.*]=Bi_2O_2: an oxide of bismuth.

Bismutite, (bis'mū-tīt). [Bismuth, *q.v.*] A mineral, chiefly carbonate of bismuth.

Bison, (bi'zon) [The Latin name.]=Biso Europæus: a large ox-like animal, belonging to Bovidæ. 1. *European B.*=Auroch: very rare. 2. *American B.*=Buffalo.


American Bison.

Bissextile year, (bis-seks'til). [L. *bis*, twice; *sextus*, sixth.] =Leap year: every fourth year, when the year is 366 days, February having 29 days. Named from two consecutive days having been each counted as the 6th of March.

Bistort, (bis'tort). [L. *bistortus*, twisted.]=Polygonum bistorta=Snakeweed: a plant.

Bistriethyl=Triethyl-bismuthine=$(C_2H_5)_3Bi$=Bismethyl: a liquid organic radicle compounded of ethyl and bismuth.

Bisulca, (bī-sul'ka). [L. *bisulcus*, cloven.] Giebel's term for giraffes, goats, &c.

Bisulcate, (bī-sul'kāt). [L. *bisulcus*, cloven.] =bisulcous: having the hoof cloven

Bisulphide, (bī-sul'fīd). [Bi and Sulphide, *q.v.*] A sulphide in which there are two equivalents of sulphur to one of the metal.

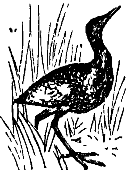
Bisulphate, (bi-sul'fāt). [Bi and Sulphate, *q.v.*] A sulphate in which there are two

equivalents of sulphuric acid to one of the base.

Bittacle, (bit'ta-kl)=Binnacle, *q.v.*

Bitter (bit'tẹr). [*Biter*, the A.-S. word.] Having a biting flavour when tasted. *B. almond* =Amygdalis communis. *B. almond, oil of* =Benzoyl hydride=C_7H_6O: one of the aromatic aldehyds. *B. apple* = Cucumis colocynthis. *B blain*=Vandelia diffusa. *B. cress* = Cardamine. *B. principle:* 1.=Carbazotic acid, *q.v.* 2. Used generally for substances such as absinthin, obtained from vegetables. *B. oak*=Quercus cerris. *B. sweet*=Solanum dulcamara. *B. spar*=A magnesian mineral; also called dolomite and rhomb spar. *B. wood*=Xylopia glabra: also=Quassia amara.

Bittern, (bit'tẹrn). 1. = Concentrated sea-water. 2. = Botaurus: a heron-like bird.


Bittern.

Bitts, (bits). Vertical projections in the deck for securing ropes, &c.

Bitumen, (bi-tū'men). [L. *bitumen*, or Gk. *pitus*, pine tree.] An inflammable amorphous mineral substance, of which there are many varieties. *Solid B.:* Mineral tallow=Hatchetin; mineral caoutchouc=Elaterite. *Viscous B.:* Mineral tar=Maltha. *Liquid B.:* petroleum and naptha.

Bituminous, (bi-tū'min-us). Containing bitumen. *B coal* = Caking coal = Pariet coal, cannel coal, &c.

Biuret, (bī'u-ret) = $C_2H_5N_3O_2 H_2O$: a compound of cyanuric acid and ammonia.

Bivalve, (bi'valv). [L. *bis*, twice; *valvæ*, doors.]= Lamellibranchiata, *q.v.* Having two valves or plates, as mussels, oysters, &c ; mostly marine, divided into Dimyary and Monomyary.


Bivalve

Bixa, (biks'a). [S. American name.] A tree belonging to Flacourtiaceæ. *B. orellana*=Arnotto.

Bixaceæ. Plants, now included in Flacourtiaceæ.

Bixads, (biks'adz). [Bixa, *q.v.*] = Flacourtiaceæ, *q.v.*

Bixin, (biks'in). [Bixa, *q.v*] The red colouring matter of arnotto, from Bixa orellana.

Bizcacha. A S. American animal of the rabbit kind, connecting the Rodentia with Marsupialia.

Black, (blak). [*Blaec*, the A.-S. word.] Not reflecting light: absorbing all light which falls upon it *B. adiantum* = Asplenium adiantum. *B. ash*=Ball soda: impure sodic carbonate. *B. band:* 1. A carbonaceous iron ore. 2. A variety of chalybite. *B. belly*= Pterocles arenarius. *B. bryony*=Tamus. *B. cock*=Tetrao tetrix. *B. cap*=Motacilla atricapilla. *B. chalk:* a mineral, chiefly silicate of alumina and carbon. *B.drop:* 1. A sedative medicine containing morphia. 2. A phenomenon in eclipses of the sun at the instant before contact, when the two appear connected by a small black body. *B. down beds*, in Devonshire, connecting upper and lower cretaceous strata. *B. fish*=Centrolophus pompilius. *B. flux:* a deliquescent mixture of carbon and potash, used in smelting. *B. ipecacuanha*= Polygola glandulosa. *B. jack.* 1.=Quercus nigra; 2.=Blende: an ore of zinc. *B. lac*= Melanorrhœa usitata. *B. lead* = Graphite, *q.v.*, a variety of carbon. *B. marble*=Anthraconite *B. mustard*=Brassica nigrus. *B. olive*=Bucida buceras. *B. pine*=Pinus austriaca. *B. quitch* = Agrostis vulgaris. *B. races*=Caffres, Hottentots, Negroes, Papuans, Andamans. *B. shag*=Phalacrocorax carboides, a bird. *B. scoter-duck*=Oidemia. *P. snake-root*=Macrotys racemosa. *B. squirrel* = Fox squirrel = Sciurus capistratus. *B. thorn*=Prunus spinosa. *B. walnut*=Juglans nigra. *B. wattle*=Callicoma serratifolia. *B wadd:* an ore of manganese. *B. wood*= Melhania melanoxylon. *B water-beetle*= Hydrous piceus, belongs to Hydrophilidæ.

Blackbeetle=Cockroach. When young quite white

Blackberry=Vaccinias.

Blackbird=Turdus merula.

Bladder, (blad'dẹr). The membraneous receptacle for the urine secreted by the kidneys. *B. catchfly*=Silene inflata *B. chain* =Durvillæa utilis. *B. locks*=Alaria. a seaweed. *B. nut*=Staphylea *B. senna* =Colutea. *B seed*=Physospermum. *B. thread*= Macrocystis. *B. wrack*=Fucus vesiculosus. *B. worms*=Internal parasites: *v.* Tæniada. *B worts*=Staphyleaceæ.

Blade, (blād). [A.-S. *blæd.*] Used of any portion which is flat and spread out. *B. of leaf*, the broad flat part. *B. of screw:* the broad flat part. *B. bone*=Scapula, *q. v.*

Blainville's classification of animals:—

Artiomorpha { Osteozoaria=Vertebrata,
Anosteozoaria=Articulata, &c
Malantozoaria=Cirripedia, &c
Malacozoaria=Mollusca, &c }

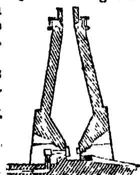
Actinomorpha=Actinozoaria = Actiniæ, Infusoria, &c.

Blainville's classification of Mammalia:—

Monodelphia: or placental mammals.
Didelphia: all marsupial animals.
Ornithodelphia: duck-mole, and porcupine ant-eater only.

Blaptidæ, (blap'ti-dē). [Blaps, the typical genus] A family of beetles belonging to Heteromera.

Blast, (blast). [A.-S. *blæst.*] A strong current of air driven through a furnace to increase the heat. *Hot B.:* a current of heated air. *B. furnace*, in which iron, &c., is smelted; a very high temperature being obtained by forcing in a stream of air.


Blast Furnace.

Blastema,(blast-ē'ma) [Gk. *blastema.*] = Formative material of plants and animals; a fluid capable of forming tissues.

Blasting, (blast'ing). [Blast, *q v.*] The removal of masses of rock by means of explosive agents. *B. oil*=Nitro-glycerine, *q.v.*= Nitroleum.

Blastocheme, (blas'to-kēm). [Gk. *blastos,* sprout.] Special generative buds developed from radiating canals in Medusæ.

Blastoderm, (blas'to-derm). [Gk. *blastos,* sprout; *derma,* skin.] A primitive organised layer surrounding the embryo in its earliest condition.

Blastoidea, (blas-toid'e-a). [Gk. *blastos,* bud; *eidos,* form.]=Pentremites: an order of Echinodermata, now extinct, found only in Palæozoic rocks, having a bud-like oval or globular form.

Blatta, (blat'ta). [The Greek word]=Cockroach: an insect, the type of Blattidæ.

Blattarius (blat-tā'ri-us). [Gk. *blatta,* moth] Relating to moths.

Blattidæ, (blat'i-dē). [Blatta, *q.v*] Cockroaches, &c.: a family of insects belonging to Orthoptera.

Blattina, (blat-tī'na). [Blatta, *q v.*]=Cockroaches: a family of insects belonging to Orthoptera.

Blazing-star=Helonias dioica: an American plant, named from its flower

Bleaching, (blēch'ing). [A.-S. *blæcan,* to shine] 1. By exposure to air and light, and washing in alkaline leys. 2. By use of chlorine for cotton goods. 3. By use of sulphurous acid for wool and silk. The bleaching is supposed to be performed by the colouring matters being decomposed, and the hydrogen in them being absorbed by the bleaching compound *B. compounds:* chloride of lime, of potash, of soda, &c., oxymuriate of lime, &c

Bleak, (blēk). [A.-S. *blæc.*]=Leuciscus alburnus a fish.

Blechnum, (blek'num). [Gk. *blechnon,* fern] A fern, belonging to Polypodiaceæ.

Bleinerite, (blī'ner-īt). A mineral, [illegible] antimoniate of lead.

Blende, (blend). [G. *blenden,* to dazzle] Black Jack=Zincic sulphide: the most common zinc mineral: also used for other lustrous minerals, as hornblende, &c: crystallises in cubes: one of the zinc group.

Blenniidæ, (blen'ni-dē). [Blennius, *q.v.*]= Blennies: a family of fishes belonging to Acanthopteri.

Blennius, (blen'ni-us) [Gk. *blenna,* mucous] =Blenny: a small fish, the body of which is covered with a mucous secretion: the type of Blenniidæ. *B. occellaris*=Butterfly fish.

Blets, (blets). Spots on decaying fruit, caused by a small fungus.

Blight, (blīt). Used for any diseased condition of cultivated plants: caused by insects, fungi, &c. *Potato B.*=Peronospora infectans.

Blights, (blīts)=Coniomycetes, *q v.*

Blighter, (blī-ter)=Aphis, *q v.*: an insect parasitic on plants.

Blimbing, (blim'bing). [Corruption of bilimbi.]=Averrhoa bilimbi: has edible fruit.

Blind, (blīnd). [The A.-S. name.] Used generally for animals without eyes, or whose eyes are very small: also for inanimate objects of a specially dull kind. *B. beetle*= Anommatus: an eyeless beetle, belonging to Colydidæ. *B. coal*=Anthracite. *B. rat*= Spalax. *B. spot:* on the retina of the eye, where the nerve enters the eye. *B. worm*= Slow worm=Anguis fragilis: a snake-like reptile, about a foot long, with small eyes, belonging to Lacertilia.

Blindage, (blind'aj). [Blind, *q.v.*] A temporary protection against artillery fire.

Blinding, (blind'ing). A layer of sand and gravel spread over newly macadamised roads.

Blinks, (blinks).=Montia, *q.v.*

Blister, (blis'ter). [*Blatter,* the German word.] A bladder caused by external application of irritation. *B. beetle*=Spanish fly =Lytta vesicatoria: an insect belonging to Meloidæ.

Block, (blok). [The German word.] A pulley or number of pulleys, in a wooden frame. *B. house:* a wooden erection, usually intended to serve as a temporary fort. *B. tin:* an inferior variety of tin. *B. work:* erections composed of blocks of wood or stone.

Blood, (blud). [A.-S. *blod.*] A somewhat viscous, opaque, red fluid, consisting of small, red particles in a colourless fluid, composed of water, fibrin, fatty matter, serolin, albumin, metallic salts, &c. *Arterial B.:* pure blood (containing more oxygen and less carbonic acid than venous blood), proceeding from the heart to the various parts of the body by means of the arteries *Venous B.:* impure blood returning to the heart by the veins, contains more carbonic acid and less oxygen than arterial blood. *B. corpuscles:* small red and white particles of solid matter suspended in the fluid of the blood. *B. ilnses* =Red corpuscles, the white being more irregular than the red, into which they also develop. *B. flower*=Hæmanthus. *B. heat;* 98° Fahrenheit. *B. roots*=Hæmodoraceæ. *B. stone.* 1.=Red hæmatite; a variety of ferric oxide. 2.=Heliotrope. a variety of jasper. *B. wort*=Sanguinaria Canadensis. *B plasma*=Liquor sanguinis.

Bloodhound=Canis sagax: a dog with a specially acute power of scenting blood.

Blowpipe, (blō'pīp.) An apparatus for supplying a continuous stream of air, used to intensify the action of a flame in chemical operations. *Mouth B.:* a small bent tube for use with the mouth. *Water B.:* a chamber partially filled with water, into which air is blown by the mouth, and from which it issues in a very regular stream.



Blowpipe.

Blowing-out. The removal of salt from boilers in which sea-water is used, by using the pressure of steam for this purpose.

Blubber, (blub'ber). The fat of whales. *Sea-B.:* a popular name for sea-nettles.

Blue, (blū). [*Bleoh,* the A.-S. name] One of the primary colours of the spectrum. *B. John*=Derbyshire spar. *B. stone:* an Australian basaltic rock. *B bird*=Motacilla sialis. *B. bell*=Scilla nutans. *B. bottle*=

Centaurea cyanus. *B.-eyed grass*=Sisyrinchium: a plant belonging to Irideæ. *B. fire:* ammonio-sulphate of copper, chlorate of potash and shell-lac. *B. gum tree*=Eucalyptus globulus: Myrtaceæ. *B. shark*=Carcharias glaucus. *B. tangles*=Vaccinium frondosum. *B. skate*=Raia beatis. *B. stars:* Capella, Bellatrix, Rigel, Procyon, Spica. *B. vitriol*= Sulphate of copper.

Blue colouring matters. *Prussian B.:* a cyanide of iron. *Smalt, q.v. Indigo, q.v. Ultramarine, q.v. Thenard's B., q.v. Saxon B.:* a compound of indigo, sulphuric acid, potash, and water.

Bluffs, an American term for high and steep banks.

Bo-tree=Ficus religiosa: the sacred tree of the Buddhists.

Boa, (bō'a). [Gk. *bous,* cow.] A large snake, belonging to Colubrina, the type of Boidæ. Said to be named from being supposed to suck cows' teats. *B. constrictor:* a very powerful snake, which kills animals by coiling itself round them so as to crush them.

Boa-constrictor.

Boar, (bō'r). [*Bâr,* the A.-S. word.] The male of swine: a wild hog. *B. fish*=Capros aper.

Board, (bōrd). [*Bred,* the A.-S. word.] A carpenter's term for a plank less than 1½ in. thick.

Boart, (bort). A dark opaque variety of diamond.

Boasting, (bōst'ing)=Scabbling: a term used in masonry.

Boat, (bōt). [A.-S. *bât.*] A small vessel, moved by oars. For the varieties *v.* barge, cutter, gig, &c. *B. bill*=Cancroma cochlearia: a S. American bird. *B. fly*=Notonecta: an insect which moves on the water, and looks like a small boat.

Bob-o-link=Dolichonyx orizyvorous: an American bird: also called rice-bird.

Bode's law. That the relative distances of the planets from the sun increase regularly, in geometrical progression, with the addition of four as a constant quantity. Column A gives the estimated distances; column B the ascertained distances—

	A	B
Mercury, . .	4+ 0= 4	3·9
Venus, . . .	4+ 3= 7	7·2
Earth, . . .	4+ 6= 10	10
Mars, . . .	4+12= 16	15
Asteroids, . .	4+24= 28	27·5
Jupiter, . .	4+48= 52	52
Saturn, . .	4+96=100	95

Bodenite, (bō'den-īt). [Boden, in Saxony.] A metallic ore, of cerium, magnesium, aluminium, &c.

Bodos. An Asiatic people.

Body plan. A transverse vertical section of a ship.

Bog, (bog). [Gael. *bog,* soft.] 1. A tract of soft earth, with much water: often the result of trees falling across a water-course, so as to dam it. 2. A tract of decaying vegetable matter, forming a kind of morass. *B. asphodel* = Narthecium. *B. bean* = Menyanthes. *B. butter:* a variety of adipocerite. *B. iron ore:* yellow threads of silica and clay, coloured by iron: a variety of limonite. *B. moss*=Sphagna. *B. myrtle* = Myrica. *B. wood:* trunks and branches of trees found in bogs, darkened by iron.

Bogie=Trolly: a truck running on four wheels, adapted to turning sharp corners. *B. carriage:* usually on eight wheels, in two sets of four, connected by a swivel joint.

Bohemian (bo-hē'mi-an). *B. diamonds:* a colourless variety of rock crystal. *B. chatterer*=*B. waxwing*=Bombycilla garrula: a bird.

Bohnenberg's electroscope. A dry pile, between the poles of which is a piece of gold leaf.

Boidæ, (boi'dē). [Boa, *q.v.*] A family of reptiles, including the boa, rock-snake, python, &c., the largest known snakes.

Boiled oil. Linseed oil that has been mixed, by boiling, with litharge or manganese oxide.

Boiler, (boil'er). 1. A vessel in which water is converted into steam for the use of a steam engine. *Cornish B.:* long and cylindrical, usually with only one tube and a large amount of heating surface. *Elephant B.*= French B. *Lancashire B.* has two tubes. *Waggon B.* resembles a waggon in shape. 2. A term for the great equinoctial calms.

Boiling, (boil'ing). The bubbling of a liquid under the influence of heat, when the pressure of its vapour equals that of the atmosphere: the transition from the liquid to the gaseous condition. *B. point* of pure water at level of sea=212° F., 100° C., 80° R.

Bojanus, organ of=Renal aperture.

Bolderberg beds, near Brussels, the Belgian Middle Tertiaries or Eocene.

Bole, (bōl). [Gk. *bolos,* clod.] A silicated mineral of the clay group, chiefly silicate of aluminium. *Red B.:* coloured by ferric oxide.

Boletic acid, (bō-lē'tik). [Boletus, *q.v.*]= Fumaric acid, *q.v.*

Boletus, (bō-lē'tus). [The Latin name.] A leathery fungus, resembling the mushroom. *B. destructor*=Dry rot, *q.v. B. igniarius*= Amadou, *q.v.*

Bolides, (bo'li-dēz). [Gk. *bolis,* a missile]= Meteors = Shooting stars: more loose in structure than aerolites, and more inflammable.

Bologna flask. Of thick glass, which has been suddenly cooled, and may be broken by the least scratch.

Bolognese, (bō'lo-nēz). [B. in Italy]. *B. phosphorus*=Native sulphide of barium, becomes phosphorescent after exposure to the sun. *B. stone*=Bologna spar: a variety of barytes or sulphate of barium, which is phosphorescent after exposure to sunlight.

Bolsover stone. [B. in Derbyshire.] A building stone, chiefly carbonate of calcium and magnesium.

Boltonite. A variety of olivin, chiefly silicate of magnesium.

Bomb, (bom). [Gk. *bombos,* humming.]=Shell: a general term for explosive projectiles, especially for those used in sieges. *B. ketch=B. vessel:* a small vessel for carrying bombs, now called a mortar boat.

Bombaceæ, (bom-bā'se-ē). [Bombax, *q.v.*]=Cotton trees: tropical plants, usually trees, with light spongy timber, belonging to Sterculiaceæ, sometimes considered as a separate order.

Bombardier beetle, (bom-bär-dēr'). [The F. word.]=Brachinus crepitans: a beetle belonging to Geodephaga, which has a small explosive apparatus in its abdomen.

Bombax, (bom'baks). [Gk. *bombyx,* cotton.] A large forest tree, the seeds of which have cottony hairs, belonging to Sterculiaceæ. *B pentandrum*=Cotton tree of India.

Bombazine, (bom-ba-zēn'). [Gk. *bombyx,* cotton.] A mixture of silk and worsted.

Bombic acid, (bom'bik). [Bombyx, *q.v.*] An acid obtained from the silkworm.

Bombidæ, (bom'bi-dē). [Bombus, *q v.*] Humble-bees: insects, belonging to Hymenoptera, living in communities, and building nests in trees, amongst stones, &c.

Bombinator, (bom-bi-nā'tor)=Yellow-bellied toad=Rana bombina.

Bombus, (bom'bus). [Gk. *bombos,* humming.] Humble-bee=Humming-bee=Dumble-bee: wild social bee, an insect the type of Bombidæ, *q.v.*

Bombycidæ, (bom-bī'si-dē). [Bombyx, *q.v.*]=A family of moths, including the silkworm moth.

Bombycilla. [Bombyx, *q v*]=Waxwing==Chatterer: a bird belonging to Dentirostres; known also as Bombycivora, from eating bees. *B. garrula*=Bohemian waxwing *B. Carolinensis*=American waxwing=Cedar-bird.

Bombyx. [Gk. *bombos,* humming.]=Oak-eggar moth: an insect, belonging to Lepidoptera, the larva of which is the silkworm.

Bonaparte's classification of vertebrate animals—

Vertebrata	Educabilia,	Mammalia, Cete, Belluæ, Pecora
	Ineducabilia,	Bruta, Bestiæ, Glires
	Birds, ...	Insessores, Grallatores, Anseres
	Fishes, ...	Marsipobranchii, Elasmobranchii, Lophobranchii, Pomatobranchii, Marsipobranchii
	Reptiles, ...	Monopnoa, Dipnoa

Bonasia, (bo-nā'si-a). A bird belonging to the grouse family, or Tetraonidæ, *q v.*

Bonassus, (bo-nas'sus). [The Latin name.] 1. A variety of the bison, *q.v.* 2. Used by Aristotle for an animal described as having the head of a bull, and the body and mane of a horse.

Bond, (bond). [A.-S. *bond.*] In brick building, the method of union. *English B.:* alternate rows of stretchers and headers. *Flemish B.:* alternate stretchers and headers in each row. *Garden wall B.:* three stretchers and one header alternately.

Bonds (of Frankland). The term used by Frankland to express the centres of attraction of the atoms of chemical elements. A monad is supposed to have but one, a dyad to have two, a triad three, &c.

Bone, (bōn). [A.-S. *ban.*] Cartilaginous matter hardened by phosphate and carbonate of lime, in which are many small spaces. *B. animals:* Oken's term for Fishes. *B. beds:* thin strata containing fossil bones, chiefly of fish and reptiles. *B. black*=Animal black=Animal charcoal=Ivory black: chiefly phosphate of lime and carbon; used as a decolorising agent. Ivory black is also used as a pigment. *B. dog*=B. shark, *q.v.* *B. earth*=Phosphate of lime. *B. liquor:* a compound of carbonate of ammonia and water. *B. oil*=Dippel's oil=Animal oil: a tar-like fluid compound of hydrocarbons, obtained from bones. *B. phosphate*=One form of calcic phosphate $=Ca_4H.3PO_4$. *B shark*=Acanthias vulgaris.

Bonito, (bo'ni-to)=Thynnus pelamys=Scomber pelemys: a fish, which devours flying-fishes; a variety of the tunny.

Bonnet, (bon'net). [The French word.] A projection at the angle of a fortified wall. *B. fluke*=Rhombus maximus=Turbot, *q.v.* *B. monkey*=Macacus radiatus: a monkey whose hair radiates from a central point on the crown.

Bonus-henricus, (bō-nus-hen-ri'kus). [The Latin name.] A plant=Chenopodium bonus-henricus.

Bony, (bō'ni). [Bone, *q.v.*] *B. fishes:* those having a bony skeleton. *B. horns:* those of oxen, goats, and other Ungulata; which are not shed. *B. labyrinth:* in the ear, *q v.* *B. pike*=Lepidosteus, a ganoid fish. *B. scutes:* plates of hardened dermis found on armadillos, and on some fishes and reptiles.

Booby, (boo'bi.) [F. *boubie.*]=Sula: a bird of the pelican kind.

Book scorpions=Cheliferidæ, *q v.*

Boom, (boom). [S. *beam*; D. *boom.*] A projecting pole, used in ships, at wharves, &c.

Boomkin, (boom'kin). Booms fixed to the bow of a ship *B. shrouds:* ropes fastened to the ends of boomkins to fix them.

Bootes, (bo-ō'tēz). [The Greek name.]=Arctophylax: one of the Northern Constellations, of which Arcturus is the chief star.

Bopyridæ, (bo-pi'ri-dē). [Bopyrus, *q.v.*] A family of sessile-eyed crustaceans, parasitic on crabs, lobsters, &c.

Bopyrus, (bō'pi-rus). The typical genus of Bopyridæ.

Bora, (bō'ra). [The local name.] A cold Alpine north wind.

Boracic acid (bō-ras'ik). [Borax, *q.v.*]=Boric sesquioxide=Boracic anhydride and water: a crystalline substance much used as a flux: $B_2O_3.3H_2O$.

Boracite, (bō'ra-sit). [Borax, *q.v.*] A haloid mineral: a borate of magnesium.

Borage, (bor'aj). [L. *cor*, heart, *ago*, I bring.] = Borrago: an herb, with rough leaves, used as a cordial, whence the name. *B. worts*=Asperifoliæ=Boraginaceæ, *q.v.*

Boraginaceæ, (bor-a-jin-ā'se-ē). [Borage, *q.v.*] =Borage-worts: herbs and shrubs, with rough leaves, belonging to Echiales.

Borago, (bor-ā'go)=Borage, *q.v.*

Borassus, (bō-ras'sus)=Gomuti Palm, *q v.*

Borax, (bō'raks). [A. *buraq*, nitre.]=Tincal =Acid borate of sodium=$Na_2B_4O_7 10H_2O$: a crystalline alkaline substance used in blow-pipe experiments, &c.

Bore, (bōr). [O. H. Ger. *por*, height.] A sea wave that enters rivers so quickly as to raise the level many feet.

Borer, (bōr'er)=Gastrobranchus cæcus, *q.v.*: a small eel-like fish, named from being supposed to bore into the bodies of larger fishes.

Boric, (bō'rik). [Boron.] Containing boron as an important constituent. *B. acid*: a compound of B. anhydride and water=B_2O_3, $3H_2O$. *B. anhydride*=B_2O_3: the only compound of boron and oxygen.

Borides, (bō'rīdz.) [Boron, *q.v.*] Compounds of boron with a metal.

Boring-snail=Helix saxicava: a snail which burrows in stone.

Borneene, (bor'nēn). [Borneo camphor, *q.v.*] $C_{10}H_{16}$: an oily hydrocarbon obtained from Dryabalanops camphora, also called Valerene.

Borneo camphor = Borneol = Camphol = $C_{10}H_{18}O$: a crystalline variety of camphor, first obtained from Borneo, from the plant Dryabalanops camphora.

Bornite, (bor'nīt). A variety of Erubescite, *q v.*: a sulphuretted ore of copper.

Boro-fluoric acid=Fluoboric acid, *q.v.*

Boron, (bō'ron). [Borax, *q.v.*]=B‴: the chief constituent of borax, a rare solid substance, somewhat resembling silicon. *B. group* of minerals: include sassolite and borax.

Borreby skulls. Human skulls taken from tumili, of the stone period, at Borreby, in Denmark.

Bort, (bort)=Boort: an inferior variety of diamond.

Bos, (bos)=Ox: a large horned animal, the type of Bovidæ, belonging to Ruminantia, of service for food, and as a beast of burden. Fossil remains found in Pliocene. *B. taurus* =Common ox. *B. urus*=Aurochsen, *q.v.*

Boscha, (bos'ka)=Teal, &c.: a bird belonging to the Duck family or Anatidæ.

Bosses, (bos'ses). 1. Projecting ornaments of rounded form in architecture. 2. Used generally for any rounded and projecting mass of rock.

Botany, (bot'a-ni). [Gk. *botane*, herbs.] A branch of biology; the science of vegetable life.

Botany Bay, in New South Wales, named from the variety of plants found there. *B. gum*, from Xanthorrhœa arborea. *B. tea*=*B. tree* =Smilax glycyphylla.

Botaurus, (bo-taw'rus). [Bog and Taurus, *q.v.*] =Bittern: a heron-like bird, belonging to Ardeidæ. Also called the Bull of the Bog, from its hoarse voice, whence probably the name.

Botanical systems, (bo-tan'ik-al). [Botany, *q.v.*] Arrangement of plants into classes, &c. The more important have been made by the undermentioned botanists:—

Morison, Ray, Herman, Gærtner,	according to the fruit.
Tournefort, Knaut, Rivinus,	,, ,, corolla.
Magnol,	,, ,, calyx.
Linnæus,	,, ,, stamens chiefly.
Jussieu,	,, to germination and petals, chiefly.
De Candolle,	,, ,, general combination of characters.
Lindley,	,, ,, ,, ,,

Bothrencephalus, (both-ren-sef'al-us). [Gk. *bothros*, pit; *kephale*, head.]=Broad-worm: a variety of the Tape-worm.

Bothrenchyma, (both-ren'ki-ma). [Gk. *bothros*, pit; *chyma*, stream.] Dotted vessels in the centre of exogen stems.

Bothriocephalus, (both-ri-o-sef'al-us.)=Bothrencephalus, *q.v.*

Bothrodendron, (both-rō-den'dron.) [Gk. *bothros*, pit; *dendron*, tree] A tree known only by dotted stems: found in the coal measures.

Botrychium, (bot-rik'i-um). [Gk. *botrys*, bunch of grapes.]=Moonwort: a fern, belonging to Ophioglossaceæ. *B. virginicum*=The rattlesnake fern.

Botryllaria, (bot-ril-lā'ri-a). [Botryllus, *q.v.*] =Botryllidæ=Compound ascidians: a division of Tunicata.

Botryllus, (bot-ril'lus). [Gk. *botrys*, a bunch of grapes.] A compound ascidian; with ovoid individuals in radiated bunches: found on sea-weed, &c. *v.* Ascidians.

Botryogen, (bot-rī'o-jen.)=Red vitriol: a sulphate of iron mineral, found in Sweden.

Botryoidal, (bot-ri-oi'dal.) [Gk. *botrys*, a bunch of grapes.] Like a bunch of grapes.

Botryolite, (bot-rī'o-lit.] A fibrous mineral: a variety of Datolite.

Botrytaceæ, (bot-ri-tā'se-ē). [Botrytis, *q.v.*]= Hyphomycetes, *q.v.*: filamentous fungi: popularly called blights and mildews.

Botrytis, (bot'ri-tis). [Gk. *botrys*, a cluster] Small round seeds=Mildew: a fungus; the type of Botrytaceæ. *B. bassiana*, developed in the body of the silkworm. *B. infestans*, cause of potato disease.

Bots, (bots). The larvæ of the gadfly; found in the intestines of the horse, causing the disease called Bots.

Bottle, (bot'l). [F. *botte*, cask.] *B. gourd*= Lagenaria vulgaris: a poisonous plant belonging to Cucurbitaceæ. *B. glass*, a silicate of alumina and lime. *B. head*=Hyperoodon butzkopf: a cetacean animal. *B. tit*=Parus caudatus, a bird. *B. nosed dolphin*=Delphinus tursio. *B. nosed whale*=Balæna rostrata. *B. papers*=Papers enclosed in tightly corked bottles, and left to drift: used to show the direction and force of sea currents, and to communicate facts as to shipwrecks, &c.

Bottom beds. A term used for Longmynd rocks; also called Lower Cambrian rocks.

Bottoming. Making a foundation for a road.

Boulangerite, (bóo-lan′jer-it). [M. Boulanger.] A mineral, chiefly a native sulphuret of lead and antimony.

Boulder, (bōl′der). [F. *boule.*] A large water-worn block of stone; usually found to have been moved some considerable distance by ice action, or the movement of glaciers.

Boulder-formation=Till=Diluvium: due to ice action, composed of sand and clay, containing boulders, few fossils; usually differs from Till proper in being of maritime deposition, and marking the termination of glaciers and of the glacial period.

Boultine, (bōl′tīn). A convex moulding, forming a quarter of a circle.

Bounce, (bouns)=Scyllium catulus, also called the Large spotted Dog Fish.

Bourbon palm=Latania.

Bourbouze's machine. A modification of Attwood's machine.

Bournemouth beds=Lower Bagshot = Alum Bay beds: sands and clays belonging to Middle Eocene.

Bournonite, (bour′no-nīt). [M. Bournon.]= Endellionite: an antimoniatted ore of lead.

Bourrans, (bóor′ranz). [The Russian name.] A snow-storm blowing from the N.E.; frequent in Russia.

Bovey-Tracey beds. [B. T. in Devonshire] Of lignite and clay, belonging to Lower Miocene.

Bovey coal. A brown variety of coal; chiefly a compound of wood and bitumen: probably the remains of the tree Pinites carbonaceus.

Bovidæ, (bo′vi-dē). [L. *bovis*, ox.]=Ox tribe: a family of animals forming a division of Ruminantia; also used to include oxen, sheep, goats, deer, giraffes, camels, &c.

Bovista, (bo-vis′ta). [The Latin form of the German name.]=Bull puff-ball: a fungus of large size, which, when burnt, gives off smoke having narcotic properties.

Bow, (bow). [*Bug*, the German name.] 1 the curved fore part of a vessel. 2. (bō). *B. compasses*, compasses having a bow-shaped arm, used to draw large circles. *B. saw*, a flexible saw for cutting along curved lines. *B. suspension truss*, a bow-shaped beam used to strengthen a girder beam. *B. window*, a projecting window, forming part of a circle or ellipse.

Bower, (bow′er).=Morrhua minuta: also called the Power Cod; the smallest of the Cod family of fishes. *B. anchor*, the anchor in ordinary use. *B. bird*=Ptilonorhynchus holosericeus: an Australian bird, which builds a kind of bower with grass.

Bowsprit, (bō′sprit). [Bow and Sprit.] A spar projecting from the stem of a vessel, to fasten the head sail to.

Bowstring, (bō′string). A string tightened by the elasticity of a bent bow. *B. girder*, a girder in the form of a bent bow. *B. hemp* =Sanseviera.

Box, (boks). [*Pyxos*, the Greek name] 1 = Buxus, an evergreen plant. 2 =A fish belonging to Sparoidei. *B. tree*=Eucalyptus, a New Zealand tree. *B. coupling*, a metal collar or small box used to connect two pieces of machinery. *B. tortoises*=Land tortoises= Land turtles: so called because they can withdraw their head and legs into their bony covering, which entirely encloses them. *B. slaters*=Idothea: sessile-eyed crustacean animals, belonging to Isopoda; *v.* Slaters. *B. thorn*=Lycium, a plant belonging to Solanaceæ. *B. elder*=Acer negundo, a variety of the maple tree=Negundo.

Boyeau, (bo-yō′). [The French word.] A covered trench made during a siege.

Boyle's fuming liquor. [R. Boyle, English nat. phil.]=Hydrated diammonic disulphide =Monosulphide of ammonium: a fetid oily liquid, which fumes when freshly made; also called volatile liver of sulphur, and obtained as a mixture of several sulphides of ammonium.

Boyle's law. [R. Boyle, English nat. phil.] =Mariotte's law: that the volume of a gas varies inversely with the pressure to which it is subjected.

Brachelytra, (brak-e-lī′tra). [Gk. *brachys*, short; Elytra, *q.v.*]=Rove beetles, a primary division of Coleoptera.

Brachelytrum, (brak-e-lī′trum). [Gk. *brachys*, short, Elytra, *q.v.*] A plant belonging to Graminaceæ.

Brachial, (brak′i-al). [Gk *brachion*, arm] Connected with the arm. *B. artery*=Portion of the axillary artery between the shoulder and elbow. *B. plexus*=The junction of first dorsal and lower cervical nerves, from which issue the nerves of the arm.

Brachinus, (brak′i-nus). An insect, belonging to Coleoptera, which expels an acrid liquid with an explosive sound.

Brachiolites, (brak′i-o-līts). [Gk. *brachion*, arm, *lithos*, stone.] Fossil sponges found in chalk, named from their lateral processes.

Brachiopoda, (brak-i-op′o-da). [Gk *brachion*, arm, *pous*, foot.]=Lamp shells: a division of Molluscoidea: marine bivalves, of wide range, but rare in British seas; also called Palliobranchiata; having no separate organs for breathing, locomotion, or sight, but an intestine, and nervous and atrial systems, with two long spiral arms, one on each side of the mouth.

Brachiurus, (brak-i-ū′rus). [Gk. *brachys*, short, *oura*, tail.] A short-tailed American monkey, of timid character, living amongst bushes.

Brachycephalic,(brak-i-sef-al′ik). [Gk.*brachys*, short; *kephale*, head.]=Short-headed: term used by Retzius.

Brachylophis, (brak-il′o-fis). [Gk. *brachys*, short, *lophia*, neck]=Banded Iguana.

Brachyphyllum, (brak-i-fil′lum). [Gk.*brachys*, short; *phyllon*, leaf] An Oolitic conifer.

Brachypodium, (brak-i-pō′di-um.) [Gk. *brachys*, short; *pous*, foot.] A grass plant, belonging to Graminaceæ, with very short spikelets

Brachyura, (brak-i ū′ra) [Gk *brachys*, short; *oura*, tail]=Crabs, a division of Decapoda, *q.v.*

Bracken, (brak'en). [Gk. *brake*, brushwood.] =Pteris: a coarse variety of fern.

Bracket system of shipbuilding. A combination of longitudinal and transverse frames bracketed together.

Bracklesham beds, (brak'el-sham). [B. near Chichester.]=Bagshot beds: a series of rocks belonging to Upper Tertiary, above London clay, contains fossil remains of crocodiles, fishes, &c.

Bract, (brakt). [L. *bractea*, thin layer.] 1. A small leaf or scale from the axil of which a leaf grows. 2. A part of a hydrozoön which resembles a sheath of flowers.

Bracteole, (brak'te-ōl). [Bract, *q.v.*]=Bractlet: a small bract.

Bradford clay, (brad'ford). [B. in Yorkshire.] A sub-division of the Oolitic rocks; contains many Apiocrinites.

Bradypodidæ, (brad-i-pod'i-dē). [Bradypus, *q.v.*] Owen's term for animals such as the sloth.

Bradypus, (bra'd-i-pus). [Gk. *bradys*, slow; *pous*, foot.]=Sloth: an arboreal quadruped, belonging to Edentata, found only in South America. *B. didactylus* = Unaw = Two-handed sloth.

Brain, (brān). [A.-S. Bragen.]=Cerebrum: the chief nervous ganglion, continuous with the spinal cord; the organ of consciousness, reasoning, and volition. *B. case* = Calvarium: the portion of the skull enclosing the brain: in Orang about 28 cubic inches: in Gorilla, 32 cubic inches; in man, average about 90 cubic inches. *B. coral*, having the polyps arranged in rows like the convolutions of the brain.

Brainstone, (brān'stōn)=Meandrina: a coral, belonging to Anthozoa, in which rows of corallites resemble the convolutions of the brain, often 10 or 20 feet in diameter.

Braize, (brāz) = Becker = Pagrus vulgaris = Sparus pagrus: a fish.

Brake, (brāk). [1. Welsh, *brwg*, brushwood; 2. A.-S. *bracan*, to pound.] 1. Bracken= Pteris acquilina, *q.v.* 2. Rock=Brake, *q.v.* 3. Break: an apparatus for retarding the motion of machinery by the resistance of friction.

Bramah press. An hydraulic machine by which enormous force can be applied, owing to the incompressibility of water.

Bramble, (bram'bl). [*Brembel*, the A.-S. name.]=Rubus fruticosus: a rough prickly shrub, of which the blackberry is a variety.

Branch-building. Building nests amongst the branches of trees. *B. birds*=Rook, crow, heron, chaffinch, goldfinch, oriole, mocking-bird, &c. *B. mammalia*=Dormice, &c.

Branchiæ, (brang'ki-ē). [Gk. *bragchion*, gill.] A respiratory organ adapted to the use of aquatic animals who breathe the air contained in water.

Branchial, (brang'ki-al). [Gk. *bragchion*, gill.] Connected with branchiæ or gills. *B. animals* = Oken's term for crustacea. *B. arches* = Bony arches supporting the branchiæ. *B. chamber*=Gill chamber of fishes. *B. ganglia* = Parieto-splanchnic ganglia, *q.v.* *B. sac:* in Tunicata, the general cavity of the body, regarded as the homologue of the gills in bivalves; in the Lancelet, a large cavity into which the mouth opens.

Branchiata, (brang-ki'ā-ta). [Gk. *bragchion*, gill.] A sub-division of Tunicata, marked by a large branchial sac.

Branchiate (brang-ki'āt). [Gk. *bragchion*, gill.] Having gills. *B. vertebra*=Anamniota = Anallantoidea, *q.v.*: a division of vertebrata, comprising Fishes and Amphibia.

Branchio-gasteropoda, (brang-ki-o-gas-ter-op'-o-da). [Gk. *bragchion*, gill; *gaster*, belly: *pous*, foot.] = Whelks, periwinkles, &c.: molluscous animals, belonging to Gasteropoda, which breathe by gills.

Branchiopoda, (brang-ki-op'o-da). [Gk. *bragchion*, gill; *pous*, foot.] Crustacean animals, whose feet serve also for respiration, and whose bodies have either more or fewer than twenty segments.

Branchiostegal, (brang-ki-os'te-gal). [Gk. *bragchion*, gill; *stego*, I cover.] In fish, the supports to the gill-covering membrane.

Branchiostoma, (brang-ki-os'to-ma). [Gk. *bragchion*, gill; *stoma*, mouth.]=Cirrostomi =Lancelet, *q.v.*

Branchipus, (brang'ki-pus). [Gk. *bragchion*, gill; *pous*, foot.] An animal belonging to Branchiopoda, *q.v.*

Branchite, (brang'kīt)=C_9H_{16}. A hydrocarbon found in the lignites of Tuscany.

Branchootoca, (brang-ko-ot'o-ka). Owen's term for a sub-division of Vertebrata=Dipnoa.

Brand goose. A variety of the wild goose.

Brandreth, (brand'reth). [F. *brandir*, to ward off.] A railing or other fence round an opening.

Brands=Blights=Mucoraceæ, *q.v.*

Brandy, (bran'di). [Ger. *brant*, burnt; *wein*, wine.] Spirit of wine, obtained from wine-grapes, potatoes, pears, &c. *British B.*: obtained from malt.

Brandy-bottle=Yellow Water Lily=Nuphar, *q.v.* The flowers have a brandy-like odour.

Branlin, (bran'lin). A variety of the salmon.

Brash, (brash). [A provincial name.] Angular fragments of rocks broken off by weather also called rubble.

Brass, (bras). [*Bras*, the A.-S. name.] An alloy of copper and zinc. *Monumental B.*: an engraved plate of brass let into a stone slab to serve as a memorial.

Brassates, (bras'sāts). [Brassic acid, *q.v.* Salts of brassic acid.

Brassic acid, (bras'sik). [Brassica, *q.v.*] A constituent of colza oil found in the seeds of Brassica; a mixture of two glycerides. Possibly=Erutic acid.

Brassica, (bras'si-ka). [The Latin name.] Cabbage, turnips, &c.; herbs of very wide cultivation, belonging to Brassicaceæ.

Brassicaceæ, (bras-si-kā'se-ē). [Brassica, *q.v.*] =Cruciferæ: radishes, turnips, cabbages, &c; herbs with cruciform flowers belonging to Cistales.

Brassidic acid, (bras'si-dik). [Brassica, *q.v.*] =$C_{22}H_{42}O_2$: a monobasic acid derived from erucic acid, *q.v.*

Brassylic acid, (bras'si-lik). [Brassica, *q.v.*] $=C_{11}H_{20}O_4$: a bibasic acid obtained by the action of nitric acid on benolic acid.

Brattice, (brat'tis). [Sc. Brettys, or a corruption of bartizan.] A partition in the galleries of a coal mine.

Braunite, (braw'nīt). [Ger. *braun.*] An ore of manganese; the German name for the peroxide of manganese.

Brazil, (bra-zil'). [Pg. *braza,* glowing coal.] *B. wood:* the timber of Cæsalpinia Braziliensis, a rich red-coloured dye-stuff. The name of Brazil had been given to this wood, and was also given to Brazil from the abundance of the trees found there. *B. nuts:* the fruit of Bertholletia excelsa. *B. mate*=*B. tea:* Ilex Paraguensis.

Brazilein, (braz'i-lin). [Brazil, *q.v.*] The colourless principle which, when oxidised, becomes the colouring matter of Brazil wood.

Bread, (bred). [*Breod,* the A.-S. name.] Flour of corn kneaded into a paste with water, and rendered porous by carbonic acid gas. *B. fruit-tree* = Artocarpus incisa, with edible starchy fruit. *B. nut* = Brosimum alicastrum. *B. root* = Psoralea esculenta. *B. tree*=Zamia caffra.


Bread-fruit.

Break, (brāk). [A.-S. *brikan.*]=Rheotome=Commutator: an apparatus for rapidly breaking and remaking the connection of the parts of an electric battery.

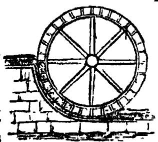
Breakers, (brāk'ers). The waves that are broken up into foam by the force with which they fall upon the rocks, &c.

Breaking-joint=Break-joint: the method of building up a compound beam in which the joints of the pieces are alternated so that each is strengthened by the side pieces.

Breakwater, (brāk'-waw-ter). A very wide stone wall, with still broader foundation, built in the sea, at a distance from land, to stop the action of the waves and form a roadstead.

Bream, (brēm). [*Brême,* the French name]= Pagellus centrodontus = Sparus smaris = Abramis brama: a fish.

Breast, (brest). [*Breost,* the A.-S. name.] *B. bone*=Sternum: the bone in which the ribs terminate in front. *B. hooks:* iron or timber knees connecting the two sides of a ship. *B. wheel:* a wheel turned by the force of water which is level with its centre. *B.-work:* any rude fieldwork constructed for defence and adapted for firing from.


Breast-wheel.

Breath-figures. Figures visible only in vapour made upon plates of metal glass, &c., probably by the action of electricity. Ex., a coin resting for a time on a plate of smooth metal will leave behind it a faint copy, visible if breathed upon.

Breathing, (brēth'ing). [Breath.] The inspiration of oxygen, and the expiration of carbonic di-oxide, by which the blood is purified.

Breccia, (brek'si-a). [It. *breccia,* fragment.] Angular fragments consolidated into stone.

Breech, (brēch). Of a gun, from the bottom of the bore to the neck of the cascable.

Breeze-fly, (brēz-flī). [*Briosa,* the A.-S. name.] The gad-fly, bot-fly, &c.=Œstrus bovis: produces galls on cattle.

Breguet's thermometer. Three slips of platinum, gold, and silver coiled into one spiral, which unwinds if the temperature rises, and coils more closely if it falls, owing to the difference in the degrees of expansion and contraction of the three metals.

Breithauptite, (brī'top-tīt). [M. Breithaupt.] An ore of nickel.

Bremer green. A pigment obtained from sulphate of copper and alumina.

Bressummer, (bres'sum-mer) = Breast summer: a strong beam across any wide opening; a small bressummer=A lintel.

Brett, (bret)=Rhombus vulgaris, a fish.

Brevilinguia, (brev'i-ling'wi-a). [L. *brevis,* short; *lingua,* a tongue.] A group of lizards having thick fleshy tongues.

Breviped, (brev'i-ped). [L. *brevis,* short; *pes,* foot.] Having short feet.

Brevipennate, (brev'i-pen-āt). [L. *brevis,* short; *pennatus,* winged.] Having short wings: used for a group of birds including the ostrich, emu, &c.

Brewing, (broo'ing). [*Breovan,* the A.-S. word.] Extraction of beer and ale from grain.

Brewster's theory of light. That there are three primary coloured rays, red, yellow, and blue, which together make white light.

Brewsterite, (broo'ster-īt). [Sir D. Brewster.] A mineral, chiefly silicate of aluminium, belonging to the Zeolite group.

Brewstoline, (broo'sto-lin). [Sir D. Brewster.] =Brewstolin: a colourless liquid hydrocarbon, very expansible by heat.

Brexia, (brek'si-a). [L. *brexis,* rain.] A plant with beautiful foliage and green flower, named from the shelter it affords.

Brexiaceæ. [Brexia, *q.v.*]=Brexiads: trees of Madagascar, with leathery leaves, belonging to Saxifragales.

Brezilin, (brez'i-lin). [Brazil, *q.v.*] The colouring matter of Brazil wood, *v.* Brazilein.

Briar, (brī'ar). [*Braer,* the A.-S. name.] A thorny plant belonging to Rosaceæ. *Sweet B.:* Rosa rubiginosa.

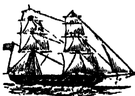
Brick, (brik). [A.-S. *brice,* fragment.] A piece of baked clay used in building. In Britain a brick is usually 9 in. long, 4½ in. wide, and 2½ in. thick. A brick placed lengthways is called a *stretcher,* and one placed crossways is called a *header. Bath brick:* compressed sand, named from the shape of the blocks, and from being taken from the bed of the river near Bath.

Bridge, (brij). [*Brycg,* the A.-S. name.] A roadway across a river or other piece of

water. *B. board:* the timber supporting the ends of a flight of wooden stairs.

Bridlington beds. In East Yorkshire. Belonging to Newer Pliocene, with marine fossils, indicative of an Arctic climate.

Brig, (brig). [*Brigantine,* the French name.]=Brigantine: a square-rigged vessel with two masts and fore and aft mainsail.


Brig.

Brigade, (bri-gād'). [The French name.] A combination of several regiments, battalions, or squadrons, into one company.

Bright's disease. [Dr. Bright.]=Albuminuria=Granular disease of the kidneys.

Brill, (bril)=Rhombus vulgaris: a flat fish.

Brilliant, (bril'i-ant). [F. *briller,* to shine.] A diamond cut so as to reflect light very vividly.

Brimstone, (brim'stōn). [A.-S. *bryne,* burning; and stone.]=Stick sulphur, *q.v.* *B. butterfly*=Gonepteryx rhamni. *B. moth*=Rumia cratægata.

Brine, (brīn). [A.-S. *bryne,* burning.] Water containing salt, especially sea-water. *B. shrimps*=Artemia: belong to Phyllopoda.

Brining-boiler. The removal of the accumulated salt from marine engines.

Brisinga, (bri-sing'a). [A Scandinavian name.] A rich crimson starfish, found at 200 fathoms, near Norway, in 1853: resembles the extinct Protaster.

Bristle-worts. [Bristle and worts.]=Desvauxiaceæ, *q.v.*

Bristol stone=Bristol diamond: a pure colourless variety of quartz.

Brisure, (bre-sur'). [F. *briser,* to break.] A portion of a rampart which branches from the main wall.

Britannia-metal, (bri-tan'ni-a)=Tutania: an alloy of antimony, bismuth, brass, and tin, and, in some cases, arsenic; tin being the chief constituent.

British, (brit'ish). *B. absolute unit, v.* Unit. *B gum*=Dextrine=Gum (artificial), *q.v* *B. tea*=Made from elm leaves. *B. tobacco*=Tussilago farfara. *B. fossil mammalia,* in Oolitic, Eocene, and more modern strata.

Brittle, (brit'l). [A.-S. *bryttan,* to break.] Can be easily broken into small pieces, but not easily cut. *B. silver glance*=Native sulphide of silver.

Brittle-worts, (brit'l-wurts). [Brittle and wort, *q.v.*]=Diatomaceæ, *q v.*

Brixham cave, (briks'ham). [B. near Torquay.] In which have been found flint instruments, and bones of extinct and extant quadrupeds, including those of the elephant, rhinoceros, horse, ox, stag, lion, hyena, bear, dog, hare, and shrew.

Briza, (brī'za). [The Greek name.]=Quaking grass: a grass plant, belonging to Graminaceæ.

Broach, (brōch). [*Broche,* the French name.] A tapering steel instrument used for enlarging holes in metal.

Broad-bill=Platalea leucorodia: a bird, also called Spoon-bill, from the shape of the bill.

Broad breast-boned apes=Anthropoid apes, *q.v.*

Broad gauge, (brâwd'gāj). Used of a railway that has a distance of 7 ft. between the rails.

Broca's convolution. In the brain; discovered by Broca.

Broccoli, (brok'o-li). [The Italian name.] A variety of the cauliflower.

Brocket, (brok'et). A young red-deer.

Bromacetic acid=$C_2H_3BrO_2$: obtained from bromine and acetic acid: a monobasic deliquescent crystalline substance, which blisters the skin.

Bromal=C_2HBr_3O: obtained by the action of bromine on alcohol; corresponds to chloral: a colourless, pungent, acrid oil.

Bromamide=Bromide of nitrogen.

Bromanisic-acid=$C_8H_7BrO_3$: a white crystalline substance, obtained from bromine and anisic acid.

Bromanisol=C_7H_7BrO: a compound of bromine and anisol.

Brome grass, (brōm). [Gk. *broma,* nourishment.]=Bromus: a grass plant, of which there are many varieties, belonging to Graminaceæ.

Bromelia, (brō-mē'li-a). [Bromel, a Swedish botanist.] The typical plant of Bromeliaceæ, *q.v.*

Bromeliaceæ, (brō-mē-li-ā'se-ē). [Bromelia, *q v.*]=Bromel-worts=Pine apples, &c.. American plants with short stems and numerous seeds; belonging to Narcissales.

Bromhydrins. A series of compounds obtained by the action of bromide of phosphorus on glycerin.

Bromic acid, (brō'mik). [Bromine, *q v.*]=$HBrO_3$=Hydric bromate: a monobasic liquid acid. *B. silver:* native bromide of silver.

Bromides, (brō'mīdz). [Bromine, *q.v.*] Compounds of bromine with other elements, all solid; also compounds of bromine with organic radicles.

Bromine, (brō'mīn). [Gk. *bromos,* stench.]=Br': a deeply-red heavy liquid, resembling chlorine in properties: one of the Halogens, *q.v.*

Bromiodoform, (brō-mi-od'o-form). [*Bromine* and *iodoform.*]=$CHBr_2I$: a colourless volatile liquid, formed by union of bromine and iodoform.

Bromite, (brō'mīt). [Bromine, *q.v.*] Native bromide of silver.

Bromoform, (brō'mo-form). [Bromine and formyl. *v.* Chloroform.]=$CHBr_3$: analogous to chloroform: a limpid liquid, slightly combustible.

Bromus, (bro'mus). [Gk. *bromos,* wild oat.]=Brome grass: belonging to Graminaceæ.

Bromyrite=Native bromide of silver.

Bronchi, (brong'ki). [Gk. *bronchos,* throat.] The branches of the windpipe which convey air to the lungs.

Bronchial tubes, (brong'ki-al). [Bronchi, *q.v.*] Sub-divisions of the bronchi, ramifying in the lungs and ending in minute air-cells.

Bronchocele, (brong'ko-sēl). [Gk. *bronchos,* throat, *kele,* swelling,]=Goitre=Derbyshire neck: a swelling of the thyroid gland, pro-

ducing a tumour-like enlargement of the neck.

Bronchotomy, (brong-kot'o-mi). [Gk. *bronchos*, throat; *temno*, I cut.]=Tracheotomy, *q.v.*: an incision for surgical purposes in the windpipe.

Brongniart's classification of plants used in French schools—

Cryptogamæ, { Amphigenæ, Algae, Fungi, Lichens. Acrogenæ, Mosses, Ferns.

Phanerogamæ, { Monocotyledons. Dicotyledons.

Brontozoum, (bron'to-zōōm). [Gk. *brontes*, giant; *zoon*, an animal.] An animal known only by fossil footmarks. *v.* Pachydactylous Lithichnozoa.

Bronze, (bronz). [The French word.] 1. An alloy of copper and tin with some zinc and lead, tough, hard, and unaffected by weather, used for statuary. 2. A figure made of bronze.

Bronzite, (bron'zīt). A mineral, chiefly silicate of magnesia.

Brooke's sounding apparatus. [The inventor.] A hollow rod carried down to the sea bottom by a heavy weight, which is then detached. The rod when drawn up is full of sand, &c., from the sea bottom.

Brookite, (brō'kite). A mineral, chiefly oxide of titanium, also called Juinite and Arkansite.

Brooklime=Veronica beccabunga, *q.v.*

Broom, (brōm). [*Brom*, the A.-S. name.]= Cytisus: a plant belonging to Leguminaceæ. =Spartium.

Broomrape=Orobanche, *q.v.*

Broom-cypress=Kochia, *q.v.*

Brorsen's comet, discovered in 1846, and appeared again 1868.

Brosimum, (brō'si-mum). [Gk. *brosimos*, good to eat.] A plant belonging to Artocarpaceæ, one species of which is the cow-tree, *q.v.*

Brossite, (bros'sīt). [Brossa valley, Piedmont.] A variety of bitter-spar.

Broussonetia, (brōō-son-ē'si-a). A plant belonging to Urticaceæ, the inner bark of which is a material for paper. *B. papyrifera*=Paper mulberry, the only species.

Brown, (brown). [*Brun*, the A.-S. word.] Used as an adjective. *B. coal* = Lignite = Wood coal. *B. pigments:* umber, manganese, burnt sienna, &c. *B. races;* Hindoos, Ethiopians, Malays. *B. spar:* a mineral, chiefly carbonate of lime. *B. umber:* a brown earthy variety of limonite. *B. colouring matters*, for china ware: oxides of iron, oxide of manganese, chromate of iron, &c.

Brownian movement, (brow'ni-an). [Dr. Brown, discoverer.] The motion of bacteria in their earliest stages, said to have been noticed for some time after death.

Brucine, (brū'sin). [Brucea.]=Brucia=$C_{23}H_{26}N_2O_4$: an alkaloid poisonous base derived from the plant Strychnos Nux-vomica, named from the plant Brucia.

Brucite, (brū'sīt). [Dr. Bruce.] A mineral, chiefly hydrated magnesia.

Brugmansia, (brug-man'si-a). 1. A plant belonging to Rafflesiaceæ. 2. A plant belonging to Solanaceæ, now called Datura, *q.v.*

Brunhilda, (brun-hil'da). A minor planet discovered in 1872.

Bruniaceæ, (brū-ni-a-se-ē). [Brunia, the typical genus.] Bruniads: African shrubs with small leaves and flowers, belonging to Umbellales.

Bruniquel cave. Near village of B., dep. of Tarn and Garonne, France, in which are found human and equine remains.

Brunolic acid, (bru-nō'lik). Obtained from coal tar naptha, named from its brown colour.

Brunonia, (brū-nō'ni-a). [From the Latin form of Dr. Brown's name.] The only genus of Brunoniaceæ.

Brunoniaceæ, (brū-nō-ni-ā'se-ē). [Brunonia, *q.v.*] Brunoniads: stemless herbs of N. Holland, belonging to Monopetalous Exogens.

Brussels sprouts, (brus'selz sprowts). A variety of Brassica oleracea.

Bruta, (broo'ta). [*Bruta*, the Latin word.]= Pachyderma: a collective term for elephants, rhinocera, anteaters, &c.

Brya, (brī'a). [Gk. *bryo*, I sprout.] A plant belonging to Fabaceæ, the seeds of which begin to germinate on the plant.

Bryaceæ, (brī-ā'se-ē). [Bryum, the typical genus.]=Urn-mosses: small cellular plants, belonging to Muscales.

Bryology, (brī-ol'o-ji). [Gk. *bryon*, moss.] The science of the nature and development of mosses.

Bryonia, (brī-ō'ni-a). [Gk. *bryo*, I sprout.]= Bryony: an herb, belonging to Cucurbitaceæ, named from its quick growth.

Bryonine, (brī'o-nin). [Bryony, *q.v.*]=Bryonin =$C_{48}H_{84}O_{21}$: the bitter principle of bryony.

Bryony, (brī'o-ni). [Gk. *bryo*, I shoot.]=Bryonia, *q.v.* *Red B.*=Bryonia. *Black B.*=Tamus.

Bryozoa, (brī-ō-zō'a). [Gk. *bryon*, moss; Zoa, *q.v.*]=Polyzoa, *q.v.*, also called *sea-moss*: very small polyp-like mollusca, which secrete moss-like coral.

Bubble shells=Bullidæ, *q.v.*

Bubo, (bū'bo). [The Latin name.]=Owl: a bird belonging to Strigidæ. *B. maximus*= Great owl.

Buccinator muscles, (buk-sin-ā'tor). [L. *bucca*, cheek.] Connected with the alveolar ridge of the jaws.

Buccinidæ, (buk-sin'i-de). [Buccinum, *q.v.*]= Whelks: molluscs belonging to Gasteropoda.

Buccinum, (buk'sin-um). [*Buccinum*, the Latin name.] A mollusc: the type of Buccinidæ. *B. undatum*=Whelk.

Buceros, (bū'se-ros). [L. *bucerus*, horn.]= Hornbill: a large omnivorous bird, with short legs and wings, and large curved beak, found in warm countries of the E. hemisphere. *B. rhinoceros*=Rhinoceros bird.

Bucida, (bū'si-da). A plant belonging to Combretaceæ. *B. buceras*=Black olive.

Buck, (buk). [*Bucca*, the A.-S. name.] The male of such animals as the deer, rabbit, &c. *B. bean*=Menyanthes, *q.v.* *B. horn*=Rhus, *q.v.* *B. thorn*=Rhamnus, *q.v.* *B. wheat*= Polygonum Fagopyrum, *q.v.* *B. wheat-tree* =Mylo-caryum, *q.v.* *B. wheats*=Polygon-

acea, *q v.* *B. sheep*=Hybrids of he goats and sheep.

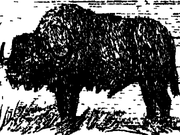
Buckler-beak=Aspidorhynchus, *q v.*

Bud, (bud). [*Bot*, the Dutch name] 1. An outgrowth containing the rudiments of a flower. 2 The first stage of gemmiparity, *q.v.*

Budding, (bud'ding). [Bud, *q.v.*] A variety of fission=Gemmiparity, *q.v.*

Bude light, (būd). The consumption of oil or gas in a stream of air; originally the gas was burnt in a number of concentric rings of jets.

Buffalo, (buf'fa-lō). [*Bufalo*, the Spanish name.] A large wild animal of the ox kind. *Common B.* = Bos buffalus = Bubalus bubalis. *Cape B.* =Bos caffer = Bubalus caffer. *American B.*=Bos Americanus=Bison. *B. grass*=Sesleria dactyloides.



Buffalo

Buffy-coat. The light-coloured surface of blood, when the coagulated particles have sunk.

Bufo, (bū'fo). [The Latin name.]=Common toad=Rana bufo, *q.v.*

Bufonidæ, (bū-fon'i-dē). [Bufo, *q.v*]=Toads: very wide spread, especially in S. America.

Bufonites, (bū'fo-nīts). A general term applied to fossil fish-teeth found in Oolitic rocks; also called serpent's eyes.

Bug, (bug). [W. *bwg*, scarecrow.] An insect belonging to Heteroptera. *Air B.*= *Land B.* = Geocorisa. *Scarlet B.* = Pyrrhocoris. *Common B.*=Cimex.

Bugloss, (bū'glos) [*Buglossa*, the Latin name.] 1. Echium, *q v.* 2. Anchusa arvensis: plants belonging to Boraginaceæ. *Vipers B.*=Echinus vulgare.

Buhl, (būl). [M. Boule, the inventor.] Inlaid work, especially of metal upon wood.

Buhrstone, (bur'stōn). [O E. *bur*, whetstone.] A hard stone of cellular structure, chiefly flinty quartz, used for millstones.

Building, (bil'ding). [A.-S *byldan*, to build.] Used as an adjective for animals which construct hives, nests, &c. *B. birds:* bower-bird, magpie, wren, thrush, &c. *B. insects:* wasps, ants, &c. *B. mammalia:* bettong, musquash, &c.

Builge, (bilj). [Probably a corruption of *bulge*.] The full part of a ship, on each side, which has to be supported when aground.

Builgeways, (bilj'wāz). [Builge, *q.v.*] Support the cradle in launching.

Bulb, (bulb). [*Bulbus*, the Latin name] An underground bud, usually can live if separated.

Bulimulus, (bu-lim'u-lus). [Bulimus, *q.v.*] A variety of Bulimus, having a differently shaped lip.

Bulimus, (bu-lī'mus). [Altered from Bulinus, or Gk. *boulimos*.] Plant-eating molluscs of very many species. *B. auris vulpina:* a large shell of St. Helena, recently extinct.

Bull, (būl). [A -S. *bellan*, to roar.] 1. The male of animals belonging to Bovidæ. 2. Used generally for the male of any large quadruped. 3. Taurus: one of the signs of the Zodiac.

Bull's eye. [Named from its shape.] A double convex lens, used to condense a ray of light.

Bulla, (būl'la). [L. *bulla*, bubble.] The typical genus of Bullidæ.

Bull-dog sounding machine. A large pair of scoops carried down by a weight, afterwards detached, which bring up specimens of the sea bottom; first used in the ship "Bull-Dog."

Bullet-tree=Mimusops: a plant belonging to Sapotaceæ.

Bullfinch=Pyrrhula: a bird with short hard beak, short wings, living on seeds, related to the canary.

Bullfrog=Rana Mugiens: a large N. American variety, sometimes used as food; eats small birds.

Bull's horn thorn. A species of Acacia, belonging to Gummiferæ, having horn-like spines on the trunk and branches.

Bullidæ, (būl'li-dē). [Bulla, *q.v.*]=Bubble-shells: marine mollusca belonging to Gasteropoda.

Bulrush, (būl'rush). 1.=Typha: a plant belonging to Typhaceæ. 2.=Scirpus lacustris: a plant belonging to Cyperaceæ.

Bulrushes=Typhaceæ, *q.v.*

Bungalow, (bung'a-lō). [Bânglâ, the local name.] A slightly-built house, usually of only one story, common in the country districts of India.



Bungalow.

Bunium, (bū'ni-um). [*Bounion*, the Greek name] *B. flexuosum*= The Pig nut= =Ground-nut=Earth-nut. *v.* Carum.

Bunsen. [Prof. Bunsen.] *B.'s photometer:* a paper screen, a portion of which is greased: the light to be measured is placed on one side, a standard light on the other. *B.'s battery:* a galvanic battery consisting of rods or plates of carbon in strong nitric acid, and plates of zinc in dilute sulphuric acid, a strong but not constant battery. *B.'s burner:* for burning coal-gas mixed with air in varying quantities, so as give more light or more heat as required.

Bunt, (bunt). [Ger. *bund.*] Wheat-bunt= Tilletia.

Bunter-sandstein=Lower Trias=New Red Sandstone: thick beds of sandstone in England in which footprints of the Cheirotherium are found.

Bunting, (bun'ting). [Ger. *bunt*, variegated.] 1. The material of flags, &c., the colours of which are especially permanent and bright, used also to mark the length of the lines used in sounding. 2. A general name for a number of small perching birds. *Common B.*=Emberiza miliaria. *Snow B.*=Plectrophanes nivalis.

Buoy, (boy) [D. *boei, boei*.] Floating bodies, either solid or hollow, used to mark places in rivers and the sea.


Buoy.

Buphaga, (bū'fa-ga). [Gk. *bouphagos*, ox-eater.] = Beef-eaters: sparrow-like birds of S. Africa, feeding on maggots found beneath the skin of ruminant animals.

Bupleurum, (bu-plū'rum)=Hare's ear: a plant belonging to Apiaceæ.

Buprestidæ, (bū-pres'ti-dē). [Buprestis, the typical genus.] A family of insects, belonging to Coleoptera, remarkable for the beauty of their colours.

Bur-marigold=Bidens, *q.v.*

Bur-parsley=Caucalis, *q.v.*

Bur-reed=Sparganium, *q.v.*

Burbot, (ber'bot). [L. *barbatus*, bearded.]= Lota vulgaris, *q.v.*

Burdock, (ber'dok). 1.=Arctium. 2.=Lappa major: plants belonging to Asteraceæ.

Burgos lustre=Double sulphide of gold and potassium.

Burmanniaceæ, (ber-man-i-ā'se-ē)=Burmanniads: herbaceous marshy plants belonging to Orchidales.

Burmeister's classification—

Irregular animals	=	Infusoria.
Regular ,,	=	Radiata, &c.
Symmetrical ,,	=	Mollusca. Arthrozoa = Insects, Crustacea, &c. Osteozoa=Vertebrata

Burnet, (ber'net). The common name for several plants belonging to Rosaceæ. *Common B.*=Sanguisorba officinalis=Poterium officinale. *Lesser B.*=Poterium sanguisorba. *B. saxifrage*=Pimpinella. *B. moth*=Zygæna. *B. ichneumon*, destroys burnet moths.

Burnett's process of preserving timber, by means of a solution of chloride of zinc. *B. disinfecting fluid*=A solution of chloride of zinc.

Burnt-ear. A disease in corn, in which the ear seems to be burnt up: caused by Uredo carbo, a minute fungus.

Burr-stone=Buhr-stone, *q.v.*

Burrowing, (bur'rō-ing). [A.-S., *byrian*, to bury.] Living underground. *B. animals:* moles, foxes, rabbits, &c. *B. beetles:* tiger beetle, mole cricket, ant-lion, &c. *B. birds:* sand-martin, kingfisher. *B. crustacea:* crabs, wood-boring shrimps, &c. *B. insects:* brown ant, humble bee, &c. *B. molluscs:* razor shell, limpet, &c. *B. owl*=Coquimbo owl=Athene cunicularia. *B. reptiles*=Land tortoise, yellow snake, &c. *B. spiders:* scorpion, trap-door spider, &c.

Bursa Fabricii. In birds, corresponds to Cowper's glands in Mammalia.

Bursæ, (ber'sē). [L. *bursa*, purse.] Sacs containing a fluid, sometimes connecting the tendons with the bones to which they attach the muscles.

Burying beetle=Sexton beetle=Necrophorus: a beetle which buries small birds, &c.

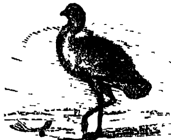
Bushel. A measure of volume, containing 8 gallons, and holding 80 lbs. of pure water.

Bushmen 1. An African people. 2 Settlers in the backwoods of a new country.

Bush-shrikes=Thamnophila.

Bust, (bust) [*Busto*, the Italian word.] A portait model of the head and breast, with the upper part of the arms.

Bustard, (bust'ard). [F. *bistarde*.]=Otis: a large land bird, with long legs and short wings, somewhat resembling the ostrich; found only in the Old World.


Great Bustard.

Butcher bird= Shrike=Lanius, *q.v.*

Butcher's broom = Ruscus, a plant belonging to Liliaceæ.

Buteo, (bū'te-o)=Buzzard: a bird belonging to Falconidæ.

Butic acid, (bū'tik). [L. *butyrum*, butter.]= $C_{20}H_{40}O_2$: a solid acid substance found in butter, also called arachidic acid.

Butomaceæ, (bu-to-mā'se-ē). [Butomus, *q.v.*] =Butomads: marshy plants belonging to Alismales; removed from Alismaceæ because of their tripetaloideous flowers.

Butomus, (bū'to-mus). [Gk. *bous*, ox; *temno*, I cut)=Flowering rush: a marsh herb, with handsome flowers, belonging to Butomaceæ; named from its cutting the mouths of cattle.

Butt, (but). [F. *but*, aim.]=Platessa flesus, the flounder.

Butter, (but'ter). [*Buter*, the A.-S. name.] 1. The fatty part of the milk of the cow, &c., which contains no nitrogen; a compound of olein, palmitin, butin, and several other fatty matters. 2. A term, now obsolete, for several soft metallic chlorides. *B. of antimony*=Terchloride of antimony. *B. of tin*= Protochloride of tin. *B. of zinc*=Chloride of zinc.

Butter. Used as a prefix. *B. bur*=Petasites vulgaris, *q.v.* a plant which has very wide leaves. *B. cup*=Ranunculus, *q.v.*: a plant named from the colour of its petals. *B. fish* =Blennius gunnellus: a small fish resembling the Blenny, also called Spotted Gunnel. *B. tree of Sierra Leone*=Pentadesma butyracea: a tree belonging to Clusiaceæ, having yellow, greasy sap. *Indian B. tree*=Bassia butyracea: a tree belonging to Sapotaceæ. *B. wort*=Pinguicula: a plant belonging to Lentibulariaceæ, which is useful in the production of butter from milk. *B. worts*=Lenbulariaceæ, *q.v.*: marshy plants having greasy leaves.

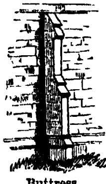
Butterflies, (but'ter-flīs). Diurnal insects belonging to Lepidoptera, named from some having the colour of butter.

Butterfly. 1. Singular of butterflies, *q.v.* 2. Used as an adjective. *B. boiler*=Whistlemouth. *B. fish*=Blennius ocellaris, a variety of the Blenny. *B. orchis*=Platanthera: a plant belonging to Orchidaceæ, also considered as belonging to Habenaria. *B. plant*=Oncidium papilio: a plant belonging to Orchidaceæ, the flower of which resembles a flying butterfly. *B. valve:* a double valve

resembling two wings. *B. weed*=Asclepias tuberosa: an American plant.

Button. Used as a prefix. *B. flower* = Gomphia. *B. tree* = Conocarpus. *B. weed* = Spermacoce. *B. wood* = Cephalanthus.

Buttress, (but'tres). [*Boutoir*, the French name.] An external brick or stone support to the wall of a building, or to a simple wall. *Flying B.:* connecting two walls at a height from the ground.


Buttress.

Butyl, (bū'til)=$(C_4H_9)_2$= Tetryl, *q.v.*=Valyl: a hydrocarbon radicle obtained from coal.

Butylactic acid, (bū-til-ak'-tik). [Butyl, *q v.*]=$C_4H_8O_3$ =Oxybutyric acid.

Butylamine, (bū-tīl'a-mīn). [*Butyl* and *amine*, *q.v.*]=NC_4H_{11}: ammonia in which one atom of H is replaced by butyl.

Butylene, (bū'ti-lēn). [Butyl, *q v.*]=C_4H_8: a gaseous hydrocarbon, one of the ethylene series.

Butylic group, (bū-til'ik). [Butyl, *q v.*]= Tetrylic group, *q v.:* of organic substances.

Butyric acid, (bū-tī'rik). [*L. butyrum*, butter.] =$C_4H_8O_2$: a volatile corrosive acid liquid found in butter, sugar, &c. *B. ether*=C_2H_5. $C_4H_7O_2$=Ethyl butyrate; an odorous liquid. *B. series* of organic substances comprises Butyric, Propylic, and Pyrotartaric groups.

Butyrine, (bū'ti-rīn). [L. *butyrum*, butter.] =Butyrin: a principle found in butter.

Butyrone, (bū'ti-rōn). [Butyric acid, *q.v.*]= $C_7H_{14}O$: the ketone of the butyric series.

Butyryl, (bū'ti-ril). [Butyric acid, *q.v.*]= C_4H_7O: an organic radicle obtained from butter, the radicle of butyric acid.

Buxine, (buk'sīn). [Buxus, *q v.*] An organic base obtained from the box plant.

Buxus, (buk'sus). [Gk. *pyxos*, dense.]=Box: an evergreen shrub or tree, with very hard wood, belonging to Euphorbiaceæ.

Buzzard, (buz'erd). [L. *buteo*, falcon or hawk.] =Buteo: a bird of the hawk kind.

Byrgius. In moon, *q.v.*

Byrrhidæ, (ber'hi-dē)=Pill beetles: a family of beetles belonging to Necrophagos.

Byssaceæ, (bis-sā'se-ē). [Byssus (2), *q.v.*] A name proposed for fungi found in damp cellars, &c.

Byssus, (bis'sus). [Gk. *byssos*, flax.] 1. Threads by which some molluscs, as mussels, attach themselves to rocks, &c. 2. A fungus.

Byttneriaceæ, (bit-ner-i-ā'se-ē). [Herr Buttner.]=Byttneriads: Cocoa, &c.: trees and shrubs, usually hairy, belonging to Malvales.

Byzantine architecture, (biz-an'tin). Common in middle ages for buildings of the Greek Church.

C.

Cabbage, (kab'āj). [*Cabus*, the French name.] =Brassica, *q v. C butterfly*=Pieris brassicæ *C.moth*=Mamestra brassicæ. *C.palm*=Areca

Cabochon, [F. *caboche*, head.] A method of cutting gems.

Caboole. A mineral somewhat resembling red jasper.

Cabombaceæ,(ka-bom-bā'se-ē)=Watershields: aquatic plants, with floating shield-shaped leaves, belonging to Nymphales.

Cacao, (ka-kā'o). [*Cacauatl*, the Mexican name.] The chocolate tree. *Wild C* = Herrania purpurea. *Cultivated C.*=Theobroma cacao.

Cachalot, (kash'a-lot). [*Cachalote*, the Spanish name.]=Physeter=Sperm whale, *q.v.*

Cacholong, (kash'o-long). A white opaque variety of opal, also called mother-of-pearl opal.

Cachutic acid=Catechu-tannic acid.

Cacodyl, (kak'o-dil). [Gk *kakos*, bad, *odme*, smell.]=Kd=Arsendimethyl=AsC_2H_6: the base of alkarsin, a heavy, fœtid, fuming liquid, which inflames spontaneously in the presence of oxygen.

Cactaceæ, (kak-tā'se-ē). [Cactus, *q.v.*]=Cacti: Indian figs: succulent shrubs, often prickly, with angular stems and fleshy leaves, if any; very short-lived flowers and succulent fruit; belonging to Cactales.

Cactales, (kak-tā'lēz). [Cactus, *q.v.*] A primary division of Epigynous exogens, with dichlamydeous polypetalous flowers.

Cactus, (kak'tus). [Gk. *kaktos*, a prickly plant.]=Melon thistle: the typical plant of Cactaceæ.


Cactus.

Caddis-flies, (kad'dis)= Phryganeæ: insects belonging to Neuroptera; also called Trichoptera. *C. shrimp*=Cerapus tubularis, a small crustacean animal.

Cadet's fuming liquor= Alkarsin=Kakodyl oxide = Kd_2O. a spontaneously inflammable liquid with very poisonous vapour.

Cadmium, (kad'mi-um). [*Cadmia*, the Latin name for the ore]=Cd″: one of the magnesian metals; a white, soft, tin-like metal.

Caducibranchiate, (ka-dū-si-brang'ki-āt). [Caducous and branchiæ, *q.v.*] Amphibious animals, such as frogs, whose gills are not permanent.

Caducous, (ka-dū'kus). [L. *caducus*, falling.]=Falling off rapidly.

Cæca. Plural of Cæcum, *q.v.*

Cæciliadæ, (sē-sil-ī'a-dē). [Cæciliæ, *q.v.*]= Gymnophiona, *q.v.*

Cæciliæ, (sē-sil'i-ē). [L. *cæcus*, blind.]=Gym-

nophiona, *q.v.*: snake-like reptiles, named from being thought to be blind.

Cæcum, (sē-kum). [L. *cæcus*, blind.] 1. A tube which ends in a closed extremity. 2. A fossil mollusc.

Cæsalpinia, (sē-sal-pin'i-a). [Lig. *Cæsalpinus*.] A plant, belonging to Fabaceæ, with gay flowers; mostly S. American trees. *C. Braziliensis*=Brazil-wood.

Cæsia, (sē'si-a). [Cæsium, *q v.*] 1.=Cs_2O=Oxide of cæsium. 2. A plant belonging to Tiliaceæ, named after Cæsius.

Cæsium, (sē'si-um). [L. *cæsius*, sky blue.]=Cs'. one of the Alkali metals; a rare metal, whose spectrum has two blue bands.

Caffeic acid, (ka-fē'ik). [F. *café*, coffee.]=$C_{35}H_{38}O_{17}$: found in coffee, also called caffetanic acid, and chlorogenic acid.

Caffeine, (ka-fē'in). [F. *cafe*, coffee.]=Theine=$C_8H_{10}N_4O_2$: a bitter crystalline alkaline base, found in tea, coffee, &c.; a methyl compound of theobromine.

Caffer-bread=Encephalartos, *q v.*: a plant of which the starch is used as a material for bread.

Cahow, (ka'how)=Shearwater, *q.v.*; a bird of Bermuda.

Caiman, (kī'man). [The native name.]=Alligator palpebrosus: a reptile of Guiana.

Cainozoic, (kā-nō-zo'ik) [Gk. *kainos*, new; *zoon*, organic being.]=Tertiary, *q v.*

Cairngorm, (kārn gorm). [Cairngorm Mountains, Scotland.]=Smoky quartz: a crystalline vitreous variety of native silica.

Cairns, (kārns). [Ir., Gael., and W. *carn*, heap.] Ancient conical piles of stones.

Caisson, (kās'son). [F. *caisse*, case.] 1. A hollow floating dam, used to close an opening, such as the entrance to a dock, &c. 2. =Tumbril, *q.v.*

Cajeput, oil of, (kaj'e-put). [The native name.] Obtained from Melaleuca cajeputi=Hydrated cajputene: a green coloured oil.

Cajputene=$C_{10}H_{16}$: a hydrocarbon obtained from oil of Cajeput.

Cakile, (ka-ki'le). [The Arabic name.]=Sea rocket, *q.v.* A large herb, found on the sea shore, belonging to Cruciferæ.

Calabash, (kal'a-bash)=Adansonia, *q.v.*

Calamaridæ, (ka-la-ma'ri-dē). [Calamary, *q.v.*] =Teuthidæ, *q.v.*

Calamary, (ka-la-mā'ri). [L. *calamus*, a reed for writing.]=Pen-and-ink fish=Geoteuthis bollensis=Loligo: found fossil in Lias; also called Squid.

Calamine, (kal'a-mīn). [L. *calamus*, reed.] =Native carbonate of zinc: a mineral which, when melted, often has a reedy appearance; one of the zinc group; also called Zinc-spar.

Calamint, (kal'a-mint)=Calamintha: an herb or shrub. *C. clinopodium*=Wild basil.

Calamites, (kal'a-mīts or kal'a-mī'tēz). [L. *calamus*, reed.] Calamariæ: reed-like plants, representing Equiseta, found in coal.

Calamus, (kal'a-mus). [The Latin name.] A palm tree having a very slender stem.

Calcaneum, (kal-kā'ne-um). [L. *calx*, heel.] =Os calcis: the bone of the heel.

Calcareous rocks, (kal-kā're-us). [L. *calx*, lime.] Compounds of lime and carbonic acid, sometimes entirely of shells and corals.

Calcaria, (kal-kā'ri-a). [L. *calx*, heel.] Short horny spurs, rudimentary hind limbs in some snakes.

Calcedony=Chalcedony, *q v.*

Calcic, (kal'sik). [Calcium, *q.v.*] *C. carbonate*=$CaCO_3$: the chief constituent of shells and coral; of which marble and Iceland spar are varieties. *C. oxide*=CaO=Lime: a very infusible white substance, much used as the chief constituent of mortar and cements.

Calcination, (kal-sī-na'shun) [*Calcinatio*, the Latin word.] Heating, in order to drive off needless materials; or to cause combination with oxygen, &c.

Calcite, (kal'sit) [L. *calx*, lime.]=Calc spar: native carbonate of lime: a mineral of which there are many varieties, crystallising usually in hexagons.

Calcium, (kal'si-um). [L. *calx*, lime.]=Ca'': one of the alkaline earth metals: a yellow malleable metal which decomposes water by contact, and forms the base of lime in all its many and abundant forms.

Calculus, (kal'kū-lus) [L. *calculus*, pebble.] 1.=Stone. 2. A method of calculation, named from pebbles having been used for counting.

Calibration, (kal-i-brā'shun) [F. *calibre*, bore.] The measurement of the diameter of tubes.

Caliciflora=Calyciflora, *q v.*

Calicophoridæ, (kal-i-ko-for'i-dē). [Calyx, *q v.*; Gk. *phoreo*, I bear.] Hydrozoa which have cup-shaped swimming organs.

Calicium, (ka-lis'i-um). [Gk. *kalukion*, a little cup.] A name used for fungi-like patches found on damp woods, belonging to Graphidaceæ.

Callan's battery. A galvanic battery consisting of plates of zinc in dilute sulphuric acid, and of platinised lead in sulphuric and nitric acids.

Calling crabs=Gelasimus, *q v.*

Callithrix, (kal'li-thriks). [Gk. *kallos*, beauty; *thrix*, hair.]=Squirrel monkey: Nyctipithecinæ.

Callitrichaceæ. [Gk. *kallos*, beautiful; *thrix*, hair.]=Star-worts: small water plants, with very small flowers, belonging to Euphorbiales.

Callorhinus, (kal-lo-rīn'us). *C. ursinus*: the male six times as heavy as the female.

Callorhynchus, (kal-lo-rink'us). [Gk. *kallos*, beauty; *rhynchos*, snout.] A fish belonging to Holocephali, which has a large fleshy appendage to the snout.

Calomel=Hg_2Cl_2=Chloride of mercury.

Calophyllum, (kal-o-fil'lum). [Gk. *kallos*, beautiful; *phyllon*, leaf.] A tropical plant belonging to Clusiaceæ.

Calorescence, (kal-o-res'enz). [L. *caloresco*, I grow hot.] The change of invisible into visible heat. *cf.* Fluorescence.

Calorie, (kal'o-re). The French thermal unit, the amount of heat required to raise one kilogramme of water one degree centigrade. =2·2 thermal units of Britain.

Caloric paradox=Leidenfrost's phenomenon, *q v.*

Calorimeter, (kal-o-rim'e-ter). [L. *calor*, heat; Gk. *metron*, measure.] An instrument for measuring the quantity of heat.

Caltha, (kal'tha.) [Gk. *kalathos*, goblet; the form of corolla.]=Marsh marigold: an herb belonging to Ranunculaceæ.

Calving,(kalv'ing). The breaking-off of icebergs from glaciers that have reached deep water.

Calycanthaceæ, (kal-i-kan-thā'se-ē). [Gk. *kalyx*, cup; *anthos*, flower.]=Calycanths: shrubs with fragrant bark belonging to Rosales.

Calyceraceæ, (kal-i-ser-ā'se-ē) [L. *calyx*, flower cup.]=Calyceers; herbs belonging to Campanales.

Calycifloræ, (kal-i-si-flō'rē). [L. *calyx*, flower cup; *flora*, flower.] Plants in the flowers of which the stamens are inserted on the calyx or disc, forming a division of Polypetalous Dicotyledons.

Calycophoridæ, (kal-i-ko-for'i-dē). (Gk. *kalyx*, cup; *phoro*, I carry.] A sub-division of Hydrozoa.

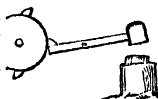
Calymône, (kal-im'e-ne). [Gk. *kalymma*, veiled.] A trilobite, *q.v.*, long mistaken for an insect.

Calyx, (kā'liks). [*Calyx*, the L. name.] The outer cup-like perianth of a flower usually green.



Calyx.

Cam, (kam). [W. *cam*, crooked, bent.] A tooth or other projection on moving machinery, used to cause intermittent motion.



Cam.

Cambray stone = Moss agate=Mocha stone, *q.v.*

Camber, (kam'ber). [F. *cambrer*, to arch.] An arch over an opening.

Cambering, (kam'ber-ing). [F. *cambrer*, to arch.]=Bending.

Cambium, (kam'bi-um). A viscid substance between the wood and bark in exogen stems; also used as=Secondary meristem. *C fluid*, the sap, or formative fluid of a plant. *C. cells:* narrow, elongated, thin-walled succulent cells.

Cambrian strata, (kam'bri-an). [Cambria, the old name of Wales.] A sub-division of Primary strata, *q v.*; partly the same as Lower Silurian. *Upper C.*=Tremadoc slates and Lingula flags. *Lower C.*=Menevian and Longmynd rocks.

Camel, (kam'el). [*Camelus*, the Latin name.]=Camelus: a large animal belonging to Ruminantia. *Common C.*=Camelus bactrianis. *Arabian C.*=Dromedary.

Cameloparдalus, (kam-el-o-pàr'da-lus). [The Latin name.]=Camelopard: a northern constellation, formed in the 17th century.

Camelina, (kam-e-lī'na). [Gk. *chamos*, ground; *linon*, flax.]=Gold of Pleasure: a plant belonging to Brassicaceæ.

Camellia, (ka-mē'li-a). [G. *kamel.*] A Chinese plant, belonging to Ternstromiaceæ.

Camelus=Camel, *q.v.*

Cameo, (kam'e-ō). [*Cammeo*, the Italian word.] A medal, coin, &c., in which the figure is carved in relief.

Camera, (kam'e-ra). [L. *camera*, chamber.] *C. lucida*, an instrument consisting essentially of a prism, in which a ray of light is totally reflected: used for drawing outlines of objects. *C. obscura*, a small box with black sides, into which a ray of light enters and forms an image: an early form of the photographic camera.

Campanales, (kam-pan-ā'lēz). [Campanula, *q.v.*] A division of Epigynous Exogens, comprising plants with monopetalous dichlamydeous flowers.

Campani's eyepiece. Consisting of three achromatic lenses: used to correct aberration in microscopes.

Campanile, (kam-pa-nē'la). [The Italian name.] A bell tower or steeple.



Campanile.

Campanula, (kam-pan'u-la). [L. *campana*, bell.] Bell-flower: an herb with bell-shaped corolla.

Campanulaceæ, (kam-pan-u-lā'se-ē). [Campanula, *q.v.*]. =Bell-worts: milky herbs belonging to Campanales.

Campanus. A crater in the moon, 27 miles in diameter.

Camphamic acid = Camphoramic acid, *q.v.*

Camphene, (kam'fēn). [Contraction of Camphogene.]=$C_{10}H_{16}$=Camphine, *q.v.*

Camphenes, (kam'fēnz).=Terebenes: a general name for the volatile oily liquid hydrocarbons, having the form $C_{5n}H_{8n}$, of which borneene, petrolene, and oil of turpentine are varieties.

Camphic acid, (kam'fik). [Camphor, *q.v.*]=$C_{10}H_{16}O_2$: a solid acid substance obtained from camphor.

Camphin, (kam'fin). [Camphor, *q.v.*]=$C_{10}H_{18}$: an oily inflammable liquid obtained from turpentine.

Camphine, (kam'fin). [Camphor, *q.v.*]=Oil of turpentine.

Camphoramic acid = $C_{10}H_{17}NO_3$ = Amidated camphoric acid=Ammonia in which one equivalent of hydrogen is replaced by one of camphoric anhydride.

Camphoric acid, (kam-for'ik). [Camphor.]= $C_{10}H_{16}O_4$ = A crystalline dibasic acid, obtained by oxidizing camphor.

Camphorone, (kam'fo-rōn). [Camphor, *q.v.*]= Phorone=$C_9H_{14}O$: an odorous oil; the acetone of camphoric acid: also used as=Camphoryl.

Camphors, (kam'forz). Hydrated hydrocarbons: solid essential oils, obtained from trees. *Borneo C.* = Borneol = Camphol = $C_{10}H_{18}O$: from Dryobalanops camphora. *Laurel C.*= Common C.=$C_{10}H_{16}O$: from Laurus camphora.

Camphoryl, (kam'fo-ril). [Camphor, *q v.*]= $C_{10}H_{14}O_2$: the diatomic radicle of camphoric acid.

Camphrene, (kam'frēn). [Camphor, *q.v.*]= $C_9H_{14}O$: a liquid obtained by the action of sulphuric acid on camphor.

Camphrone, (kam'frōn). [Camphor, *q.v.*]= $C_{30}H_{44}O$: an oily liquid, obtained from camphor by abstracting the elements of water.

Campion, (kam'pi-on). [L. *campus*, field.]= Lychnis a plant belonging to Caryophyllaceæ. *Moss C.*=Silene acaulis.

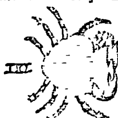
Camwood, (kam'wood) =Barwood: a red dye-wood of Baphia nitida: also called Ringwood.

Canada balsam=Canadian turpentine: from Abies balsamea, a thick oleo-resin. *C rice*= Zizania aquatica: a plant belonging to Gramineæ *C. tea*=Gaultheria procumbens: a plant belonging to Ericaceæ.

Canary bird, (ka-na'ri) [From Canary Isles] =Canary finch = Tringilla Canariensis: a song bird, remarkable for its singing and plumage.

Cancellate, (kan'sel-lāt). [L. *cancelli*, grating] =Lattice-like.

Cancer, (kan'ser). [The Latin name]=The Crab: the fourth sign of the Zodiac, which the sun enters on June 21st: includes the Bee-hive. *Tropic of C.*: between the Equator and 23½° N. latitude.


Cancer.

Cancri=Plural of Cancer.

Cancrinite, (kan'kri-nīt) A mineral, chiefly carbonate of alumina and silica.

Candelabrum tree=Chandelier tree=Pandanus candelabrum.

Candy tuft, (kan'di-tuft). [From Isle of Candia]=Iberis: a plant belonging to Cruciferæ.

Cane-sugar=$C_{12}H_{22}O_{11}$ = Sucrose: obtained chiefly from the sugar-cane, but also from the maple, beetroot, &c.

Canes Venatici, (ka'nēz vē-na'ti-si). [The Latin name.]=The Hunter's dogs: a northern constellation, formed in the 17th century, of which Cor Caroli is the chief star. The two dogs are called Asterion and Chara.

Canine, (ka-nin'). [L. *caninus*, dog-like] Relating to dogs. *C teeth*: the eye teeth in Mammalia, named from being especially developed in dogs

Canis, (kan is) [The Latin name]=Dog, wolf, jackal. a group of animals belonging to Carnivora. *C. major*=The Great Dog: a southern constellation of which Sirius is the chief star. *C. minor*=The Little Dog: a southern constellation of which Procyon is the chief star.

Cannabin, (kan'na bin). [Cannabis, *q v.*] A resinous substance obtained from hemp.

Cannabinaceæ, (kan-na-bin-a'se-e). [Cannabis, *q v.*] = Hemp worts: annual herbs with rough watery stems, belonging to Urticales.

Cannabis, (kan'na-bis). [The Latin name]= Hemp: a plant resembling the nettle, the woody tissue of which is very tough, and used for cordage, &c. *C. Indica*=Indian hemp. *C. sativa*=Common hemp.

Cannel coal, (kan'nel). [Con. of candle-coal.] A compact variety of coal, much used for gas-making and for ornament; it burns with but little smoke.

Cannon-ball tree=Couroupita guianensis.

Cannon-bone=Metacarpus or fore-leg of the horse.

Canopus, (ka-nō'pus). [Classical.]=α Argo Navis: a star of first magnitude, and one of the three brightest stars in the heavens.

Cantharidin, (kan-thar'i din). [Cantharis, *q v*] = $C_5H_{12}O_2$: a white crystalline substance found in blister beetles, &c.

Cantharis, (kan tha-ris). [Gk. *kantharis*, beetle.]=Lytta vesicatoria = Blister fly = Spanish fly: a beetle used to raise blisters.

Cantores, (kan tō'rēz). [L. *cantor*, singer.] A general name for song-birds.

Caoutchine, (koo'chin). [Caoutchouc, *q.v.*]= Caoutchin=$C_{10}H_8$: a liquid hydrocarbon obtained from caoutchouc and gutta percha.

Caoutchouc, (koo'chook) [The Hindoo name.] =C_5H_8: an elastic waterproof substance given by many trees of Moraceæ. Also called India-rubber and elastic gum. *Vulcanised C.*=C. mixed with sulphur. *Solid C.*= Ebonite, *q v.* *Mineral C.*=Elaterite, *q.v.* *Oil C.*=Congealed linseed oil.

Cape, (kāp). [Cape of Good Hope.] *C. ant-eater*: *v.* Anteater. *C. marmot* = Hyrax capensis. *C. jessamine*=Gardenia florida.

Capella, (ka-pel'la)=α Aurigæ: a sun star; also a parallax star.

Capers, (kā'perz). [*Capre*, the French name.] The flowers of Capparis spinosa, preserved in vinegar.

Capillaries, (kap'il-la-riz). [L. *capillus*, hair.] Small tubes, with thin walls, the ultimate ramifications of the veins and arteries, which distribute the blood to the various parts of the bodies.

Capillary attraction. The form of molecular attraction or repulsion, which acts when fine tubes are partly immersed in a fluid.

Capital, (kap'it al). [L. *caput*, head] The head of a column.

Capitular process, (kap-it'ū-lar). [L. *capitulum*, little head.] A small projection in a vertebra.

Capivi, (ka-pē'vi)=Copaiba, *q v.*

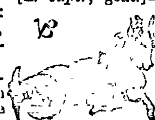
Capparidaceæ, (kap par i-da se-e). [Capparis, *q v.*] = Capparids: herbs and trees, with broad leaves, belonging to Cistales.

Capparis, (kap'pa-ris) [*Kapparis*, the Greek name]=Caper. a plant the type of Capparidaceæ

Capra, (kap'ra) [*Caper*, the Latin name]= Goat: an animal belonging to Ruminantia.

Capric acid, (kap rik) [L. *caper*, goat.]= $C_{10}H_{20}O_2$=Rutic acid: found in cocoa-nut, goat's milk, &c. *C. aldehyde*=$C_{10}H_{20}O$.

Capricornus, (kap ri-kor'nus) [The Latin name.] The Goat: the tenth sign of the Zodiac. *Tropic of C.*: between the equator and 23½° S. latitude.


Capricorn.

Caprifoliaceæ, (kap-ri-fōl-i-ā'se-ē). [L. *caper*, goat; *folium*, leaf.]=Caprifoils: herbs and shrubs, with showy flowers, belonging to Cinchonales.

Caprimulgus, (kap-ri-mul'gus). [L. *caprimulgus*, goat-milker.]=Goatsucker: a bird belonging to Insessores.

Caproic, (kap'ro-ik). [L. *caper*, goat.] *C. acid* $=C_6H_{12}O_2$: one of the fatty acids: obtained from cocoa-nut, and smells like a goat. *C. anhydride*$=C_6H_{22}O_3$. *C. aldehyde*$=C_6H_{12}O$.

Caproyl, (kap'roil). [Capric acid, *q.v.*]$=(C_6H_{13})_2$=*Dihexyl*: an aromatic liquid, the radicle of caproic acid.

Caproylene (kap'roi-lēn). [Caproyl, *q.v.*]= Hexylene, *q.v.*

Capryl, (kap'ril). [Capric acid, *q.v.*]$=C_{10}H_{19}O$, also called Rutyl, the radicle of capric acid: also used as=Octyl, *q.v.*

Caprylic acid, (kap'ri-lik). [Capric acid, *q.v.*] $=C_8H_{16}O_2$: found in butter, cheese, cocoa-nut, yeast, &c. *C. aldehyde*$=C_8H_{16}O$. *C. anhydride*$=C_{16}H_{30}O_3$.

Caprylin, (kap'ri-lin). [Capryl, *q.v.*] A fat found in butter.

Caprylyl, (kap'ri-lil) [Capryl.]$=C_8H_{15}O$: the radicle of the Caprylic series.

Capsella, (kap-sel'la). [L. *capsella*, little purse.]= Shepherd's purse: an herb with small white flowers, belonging to Brassicaceæ.

Capsicum, (kap'si-kum). [The Latin name.] =Bird-pepper: a plant belonging to Solanaceæ. *C. frutescens*=Cayenne pepper.

Capuchin monkey, (ka-pū-shēn'). [F. *capuce*, hood.]=Brown Sapajou=Cebus: a monkey which looks as if wearing a hood.

Carabidæ, (ka-rab'-i-dē). [Carabus, *q.v.*]= Ground beetles=Garden beetles: a family of Geodephaga, *q.v.*

Carabus, (kar'a-bus). [The Latin name.] A carnivorous beetle; the type of Carabidæ.

Caradoc beds, (kar-ad'ok) *v.* Bala and Caradoc beds.

Carapace, (kar'a-pās). [The French word]. The upper case or shell of lobsters, crabs, tortoises, &c.

Carat, (kar'at). [*Carato*, the Italian name.] 1. A weight=3⅙ grains. 2. A term used to express the relative quantity of gold. 24 carat means all gold, 18 carat=three-fourths gold, &c.

Caraway, (kar'a-wā)=Carum: an herb belonging to Apiaceæ.

Carbamic acid, (kār'ba-mik). [Carbon and Ammonia, *q.v.*]$=H_3N,CO_2$: a monobasic acid formed by the action of ammonia on carbonic anhydride; amidated carbonic acid. *C. ether*=Urethane$=C_3H_7NO_2$: a spermaceti-like solid substance.

Carbamide, (kar'ba-mid). CH_4N_2O=Urea, *q.v.*

Carbanilamide, (kār-ban-il'a-mīd)$=C_7H_8N_2O$ =Phenyl urea, *q.v.*

Carbazotic acid, (kar-ba-zō'tik). [*Carbon* and *azotic* acid.] = Trinitro-phenic acid=Picric acid$=C_6H_3N_3O_7$: a yellow crystalline substance used in dyeing, formed by the action of nitric acid on carbon.

Carbide, (kār'bīd). [Carbon, *q.v.*] = Carburet: a compound of carbon with a metal. *C. of iron*: a variety of cast iron.

Carbinol, (kār'bi-nol). [Carbon, *q.v.*]=Methylic alcohol$=CH_4O$=Wood spirit: a colourless combustible liquid.

Carbolic acid, (kār-bol'ik). [Carbon, *q.v.*]= $C_6H_5.HO$ = Phenylic alcohol = Phenol: a crystalline acid, obtained from coal tar, much used as a disinfectant.

Carbon, (kār'bon). [L. *carbo*, coal.]$=C^{iv}$: a chemical element, usually solid, occurring in the various forms of diamond, graphite, charcoal, coke, &c., the characteristic constituent of all organic substances. *Carbon group* of minerals: includes diamond, graphite, coal, bitumen, and amber.

Carbonaceous group of inflammable minerals. Anthracite, coal, graphite, jet, lignite, and peat.

Carbonado, (kār-bo-nā'do). An inferior variety of diamond.

Carbonate, (kār'bō-nat). [Carbon, *q.v.*] A compound of carbonic acid and a base.

Carbonic, (kar-bon'ik). [Carbon, *q.v.*] Containing carbon as an important constituent. *C. acid* $=CH_2O_3$: a solution of carbonic anhydride. *C. anhydride*$=CO_2$: a transparent heavy gas. *C. disulphide*$=CS_2$= Bisulphide of carbon=Sulpho carbonic acid: a volatile fœtid liquid of high refracting power, and very poisonous. *C. oxydichloride* $=COCl_2$ = Chlorocarbonic acid = Phosgene gas: a colourless suffocating gas. *C. ether*= $(C_2H_5)_2CO_3$=Diethyl carbonate: a mobile aromatic liquid. *C. oxide*$=CO$: an inflammable gas, the reducing agent in smelting iron.

Carboniferous formation. One of the primary groups of strata.

Carbovinic acid=Ethylcarbonic acid.

Carbuncle, (kar-bun'kl). [*Carbunculus*, the Latin name.]=Fine garnet: a variety of garnet.

Carbureic acid (kar-bur-ē'ik)=Allophanic acid, *q.v.*

Carburets, (kār'bu-retz). [Carbon, *q.v.*]= Carbides: compounds of carbon with the metals. *C. of iron*=Steel.

Carburetted hydrogen. *Light C.*$=CH_4$=Subcarburetted hydrogen = Methyl hydride = Marsh gas: a colourless inflammable gas, common in coal mines, and one of the products of distillation of organic substances. *Heavy C.*$=C_2H_4$=Olefiant gas.

Carburization of iron. Its conversion into steel by the addition of the needful amount of carbon.

Carcass, (kār'kas). [L. *caro*, flesh; and *capsa*, box.] A projectile filled with combustibles which burn fiercely for several minutes; used in bombardments, &c.

Carcharias. *C. vulgaris*=White shark.

Carcharodon. A shark-like fish, known only by fossil teeth, found in Eocene rocks.

Cardamine, (kār-da-mīn'). [Gk. *kardamon*, nasturtium.]=Bitter cress: an herb belonging to Brassicaceæ.

Carder-bee=Bombus muscorum: a variety of the humble bee, named from its habit of

carding or combing the materials for the nest by drawing them between its legs.

Cardiac, (kär'di-ac). [Gk. *kardia*, heart.] belonging to or near the heart.

Cardinal beetle=Pyrochroa coccinea.

Cardita, (kär'di-ta). A marine shell belonging to Lamellibranchiata, found in Pliocene strata.

Carduelis. *C. spinus*=Aberdevine: a bird.

Carduus, (kar'dū-us). [The Latin name.]= Thistle: an herb belonging to Asteraceæ.

Carex, (ka'reks)=Sedge: a grass-like herb belonging to Cyperaceæ.

Caribs. An American race.

Carinatæ, (kar-i-nā'tē). [L. *carina*, keel.]= Flying birds: birds which have the sternum raised so as to resemble a keel, include most ordinary birds.

Carinthian method. A reduction by roasting of pure galena, containing but little silver, named from being first used in Caranthia.

Carmidine, (kar'mi-dīn). A base obtained from shale tar.

Carmine, (kar'min). [L. *carmesinus*, crimson.] $=C_7H_8N_4O_3$: the colouring matter of the cochineal insect, much used as a crimson dye.

Carminic acid, (kar'min-ik). [Carmine, *q.v.*] $=C_{14}H_{14}O_8$: the colouring constituent of carmine.

Carnal animals, (kär'nal). Oken's term for birds, reptiles, and fishes.

Carnassial teeth, (kär'nas'si-al). [L. *caro*, flesh.] Teeth adapted to eating flesh.

Carnation, (kär-nā'shun.) [From L. *caro*, flesh.]=Dianthus caryophyllus.

Carnelian, (kär-nē'li-an). A variety of Chalcedony, a sub-vitreous gem.

Carnivora, (kär-niv'o-ra.) [L. *caro*, flesh; *voro*, I eat.] Flesh-eating animals: cats, hyænas, dogs, bears, &c., forming a division of Mammalia, sub-divided into *Fissipedia* or terrestial, and *Pinnipedia* or aquatic.


Carob.

Carob tree, (kar'ob). [A. *kharrūb.*]=Ceratonia siliqua.

Carotid artery, (ka-rot'id). *v.* Artery.

Carp, (kärp). [L. *carpo*, to seize.] A fish belonging to Cyprinidæ.


Carp.

Carpal bones, (kar'pal). [Carpus, *q.v.*] The bones forming the wrist.

Carpel, (kär'pel). [Gk. *karpos*, fruit.]. The part of a flower which contains the seed. *v.* Fruit.

Carpenter's classification of Foraminifera—

Imperforata,
 Gromida.
 Miliolida.
 Lituolida.
Perforata,
 Aranaceous.

Carpet moths. A popular name for some moths, because of the carpet-like pattern of their wings.

Carpinus, (kär-pī'nus) [The Latin name.]= Hornbeam: a plant belonging to Corylaceæ.

Carpology, (kar-pol'ō-ji). [Gk. *karpos*, fruit; *logos*, discourse.] The science of the nature and development of fruits.

Carpophaga, (kär-pof'a-ga). [Gk. *karpos*, fruit; *phago*, I eat.] 1. A division of Marsupialia, represented by the Phalanger. 2. Also used for a bird.

Carpus, (kär'pus). [Gk. *karpos*, wrist.]=The wrist: the small bones forming the wrist.

Carrara marble. A pure white semi-transparent variety.

Carrier, (kar'ri-er)=Proof-plane: used to convey small charges of electricity. Usually a small piece of gilt paper, with a non-conducting handle.

Carrion hawk=Milvago leucurus.

Carrot, (kar'rot). [It. *carota*.]=Daucus: a plant belonging to Apiaceæ.

Carronade, (kar-o-nād'). [Carron, where first made.] A short gun, used for throwing heavy shots, &c., through short distances.

Carter-fish=Lantern-fish=Pleuronectes megastoma.

Carteria, (kär-tē'ri-a). [Mr. Carter.] A cup-shaped sponge.

Cartesian diver, (kar-tē'si-an) [Invented by Des Cartes.] A small hollow figure of glass, nearly filled with water, which can be made to sink or float in water, by increasing or decreasing the quantity of contained water.

Carthamin, (kär'ta-min)$=C_{14}H_{16}O_7$: a pink colouring matter obtained from the safflower.

Cartilage, (kär'ti-lāj). [*Cartilago*, the Latin name.]=Gristle: a firm, close tissue.

Carum, (kā'rum). [The Latin name.]=Caraway; a plant belonging to Apiaceæ.

Carvel, (kar'vel). A method of boat-building, by placing the planks edge to edge, with caulking between them.

Carvene, (kar'vēn). [Carum, *q.v.*]$=C_{10}H_{16}$: a hydrocarbon, obtained from oil of caraway.

Caryatides, (ka-ri-ā'ti-dēz). [The Greek name.] Figures of women used instead of pillars to support an entablature. *cf.* Atlantes.


Caryatid.

Caryophyllite, (ka-ri-o-fil'līt). A silicated mineral of the mica group.

Carvol, (kär'vol). [Carvene, *q.v.*]=Oxidised carvene, *q. v.*

Caryophyllaceæ, (ka-ri-o-fil-lā'se-ē). [*Caryophyllus*, typical genus.]=Alsinaceæ: Cloveworts, pinks, &c: herbs, often weeds, with tumid stems, belonging to Silenales.

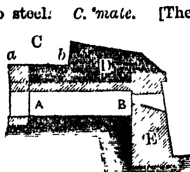
Cascable, (kas'ka-bel). [Sp. *cascabel*, knob.] The projection at the breech of a gun.

Cascade, (kas-kād'). [F. *cascade*, waterfall.] Used of an electric charge, when a number of Leyden jars are so arranged that it passes through them successively, and not simultaneously.

Cascarilla bark. *v.* Bark.

Case, (kās). *C. hardening:* a process by which iron is coated with steel, by the conversion

of its surface into steel: *C.-mate.* [The French word.] A chamber within the wall of a fortification.



Casemate.

A B, Casemate. A gun at B would fire through the *embrasure* in the wall, a gun at C would fire *en barbette*, or over the parapet D, a parapet, E, scarp wall, the outer face of which is the *scarp*; *a b*, terre plein.

Casein, (kā'se-in). [L. *caseus*, cheese.] The nitrogenous portion of butter, which can be made into cheese. *v.* Albuminoid principles.

Case-shot. Sand-shot in cylinders: used at short ranges, up to 300 yards; *v.* Shrapnel.

Cassiopeia, (kas-si-o-pē'a). [Classical.]=The Lady's Chair: a northern constellation in which a temporary star appeared from 1572 to 1574; supposed to have been a star on fire.

Cassiterite, (kas-si-ter'i-te) = Tin-stone: a mineral of the tin group, chiefly peroxide of tin, SnO_2; crystallising in pyramids. The chief tin ore.

Cassowary, (kas'sō-wa-rī). [*Kassuwaris*, the native name.] = Casuarius galeatus; a bird belonging to Cursores; found in New Guinea.


Cassowary.

Cassythaceæ, (kas-i-thā'se-ē). [Cassytha, the typical genus.] = Dodder-laurels: parasitic leafless tropical plants, belonging to Daphnales.

Castor, (kas'tor). [The Latin name.] 1.=*a* Geminorum: a binary star; one star revolving round the other in about one thousand years. 2.=Beaver, *q v.* 3. An odorous secretion from the beaver. *C. oil:* an oil obtained from the seeds of Ricinus communis, and other plants.


Castor oil Plant.

Casuarinaceæ, (kas-u-a-rin-ā'se-ē). [Casuarina, the typical genus.]=Beefwoods: drooping leafless trees, belonging to Amentales.

Cat, (kat). [The A.-S. name.]=Felis catus or wild cat, from which our domestic cat is derived.

Cats A prefix to many names. *C. ear*=Hypochæris. *C eye*, a gem: a green variety of quartz. *C. foot*=Antennaria dioica. *C. tail* =Typha. *C tail-grass*=Phleum. *C. valerian*=All-heal.

Catalysis, (kat-al'i-sis). [*Katalysis*, the Greek word] The name used to express chemical decomposition which requires for its commencement the presence of another substance which is not affected by the process. Fermentation is an example of this.

Catalytic body=Ferment.

Cataphyllary leaves, (kat-a-fil'la-ri). [Gk. *kata*, down; *phyllon*, leaf.] Colourless scale-like leaves on underground shoots.

Cataract, (kat'a-rakt). [*Cataracta*, the Latin name.] A body of water falling over a precipice.

Catarhina. [Gk. *kata*, down; *rhines*, nostrils.] =Ape: a division of the Quadrumana.

Catchfly, (katch'fli)=Silene: a plant belonging to Carophyllaceæ: named from flies and other insects being caught by the flowers, either by hairs or viscid secretions.

Catechu, (kat'e-kū). [Cochin-Chin. *cay cau.*] 1.=Acacia catechu. 2. An extract from the plant.

Caterpillars, (kat'er-pil-larz). [O. Eng. *caterpiller.*] Elongated worm-like bodies, with soft leathery covering, the larvæ of holometabolic insects.


Caterpillar.

Catharina. A crater in the moon, 65 miles in diameter.

Catharization, (kath-a-ri-zā'shun). [Gk. *katharizo*, I clean]=Cleansing thoroughly.

Cathetometer. A graduated scale, with a sliding telescope, for the measurement of small vertical distances.

Catkin, (kat'kin). An inflorescence resembling the spike, in form like a cat's tail, as in the birch tree.

Catmint=Nepeta cataria: a plant belonging to Labiatæ.

Catoptrics, (kat-op'triks). [Gk. *katoptron*, mirror.] The science of the laws governing the reflection of light. *C. telescope*=Reflecting telescope, *q.v.*

Cat's ear=Hypochæris.

Cat's eye. A gem: a greenish transparent variety of quartz, found in Ceylon and Hindostan.

Cat's foot=Antennaria dioica.

Cat squirrel=Sciurus cinereus.

Cat's tail=Typha. *C. grass*=Phleum.

Caucalis, (kaw'ka-lis). [The Greek name]= Bur parsley, &c.: a plant belonging to Apiaceæ.

Caudal, (kaw'dal). [L. *cauda*, tail] Relating to the tail. *C. fin*=Tail: a variety of median fin, vertical, and the chief organ of locomotion in fishes.

Caudate, (kaw'dāt). [L. *cauda*, tail.]=Caudal: belonging to the tail.

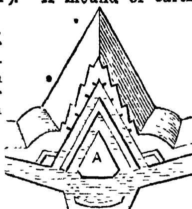
Caulescent, (kaw-les'ent). [L. *caulis*, stem.] Having an herbaceous stem.

Caulking, (kaw'king). Closing seams and joints by forcing in oakum tightly.

Caustic, (kaw'stik). A term in chemistry, applied to substances that burn the skin. *C. soda* = Sodic hydrate. *C. potash* = Potassic hydrate, *q v.* *Lunar C.*=Nitrate of silver.

Caustics, (kaw'stiks). [Gk. *kaustikos*, burning.] A term in optics. *C. by refraction:* a luminous curve formed by a number of refracted rays. *C. by reflection:* the luminous curved surface formed by the intersection of a number of rays of light reflected from a concave surface.

Cavalier, (kav-a-lēr'). A mound of earth within a bastion.


A, Cavalier Fortress.

Cave, (kāv). [L. *cavus*, hollow.] For the most remarkable caves, see each name. *C. breccias*: breccias found in caves. *C. bear*=Ursus spelæus. *C. lion*=Felis spelæa.

Cavette, (ka-vet') [The French name] A small concave moulding.

Caviare, (kav'i-ar). [*Caviar*, the French name.] The roe of the sturgeon prepared as a sauce for the table.

Cavicornia, (ka-vi-kor'ni-a). [L. *cavus*, hollow: *cornu*, horn.]=Bovidæ, *q.v.*: used as a general term for the Ruminantia, which have horns composed of a bony sheath over a bony projection of the frontal bone.

Cavy, (kā'vi)=Dasyprocta acuti, *q.v.* *Spotted C.*=Cœlogens subniger.

Cawk, (kawk). A massive variety of barytes.

Cayman, (kā'man). [The native name.]=Crocodile.

Cebidæ, (sē'bi-dē). [Cebus, *q.v.*] Arboreal monkeys, with prehensile tails, generally small, in tropical America.

Cebinæ, (se-bi'nē). [Cebus, *q.v.*]=Spider-monkeys: a sub-family of Cebidæ.

Cebus, (sē'bus). [*Kēbos*, the Greek name.]=Weeper monkey=Capuchin monkey, &c.: the type of Cebidæ, *q.v.*

Ceciliidæ. *v.* Cæciliadæ.

Cedar, (sē'dar). [*Cedrus*, the Latin name.] An evergreen tree belonging to Abies. *C. of Lebanon*=Abies cedrus: does not produce fruit for 25 years.


Cedar.

Cedrelaceæ, (sed-re-lā'se-ē). [Cedrela, *q.v.*]=Cedrelads: trees with veined and scented wood, belonging to Rutales.

Cedrela, (sed're-la). [Cedar, *q.v.*] A tree, the type of Cedrelaceæ. *C. odorata*. resembles mahogany, named from its wood resembling cedar.

Cedrene, (sē'drēn). [Cedar, *q.v.*]=$C_{16}H_{26}$: a liquid hydrocarbon obtained from cedar wood.

Celandine, (sel'an-dīn). [Gk. *chelidon*, swallow.] 1=Ranunculus ficaria: 2.=Chelidonium majus: plants belonging to Ranunculaceæ; also called Swallow-wort.

Celastraceæ, (se-las-trā'se-ē)=Spindle-trees: shrubs and trees belonging to Rhamnales.

Celery, (sel'e-ri)=Apium: a plant belonging to Apiaceæ. *C. fly*=Tephritis onopordinis: burrows in leaves.

Celestite, (se-les'tīt)=Celestine: native sulphate of strontium ($SrSo4$), a pale blue mineral, crystallising in rhombs, and colouring flame red.

Celieno. One of the Pleiades.

Cell, (sel). [*Cella*, the Latin word.] Consists of concentric layers of cell-wall, protoplasm, and sap, usually formed by partition of older cells, but also by other methods; the elementary form of organic substances.

Cellular tissue, (sel'u-lar). [L. *cellula*, little cell.] The groundwork of plants, hard in shells, compact in wood, tenacious and flexible in fibres, such as hemp, porous in pith, loose and spongy in tubers and roots.

Cellulin, (sel'lu-lin). [L. *cellula*, little cell]=Cellulose=$C_6H_{10}O_5$: the chief constituent of woody fibre; a white, insoluble, transparent substance.

Celsia, (sel'si-a). [Dr. Celsius.] A plant belonging to Solanaceæ.

Celsius scale=Centigrade scale, *q.v.*; invented by Celsius.

Cement, (sē-ment'). [*Ciment*, the French word.] A compound of nitrate of lime, gum, and water. *Roman C.*: chiefly of silica and calcic carbonate. *Portland C.*: an hydraulic cement, chiefly of chalk and clay, resembling Portland stone.

Cementation, (sem-en-tā'shun). 1. The process of converting iron into steel by heating it with carbon. 2. The conversion of glass into porcelain by heating it with sand.

Cenomyce, (sen-o-mi'se). [Gk. *kenos*, hollow; *mykes*, mushroom]. A lichen. *C. rangifera*=Reindeer moss.

Centaurea, (sen-taw're-a)=Knapweed: a plant belonging to Asteraceæ.

Centaurus, (sen-taw'rus). [Classical] One of the southern constellations, containing many important stars; the chief, *α* Centauri, has a parallax of one second, and is the nearest fixed star, its distance from the earth being 18 billions of miles.

Centaury, (sen'taw-ri). [From Centaur.]=Erythræa, *q.v.*

Centering, (sen'tẹr-ing). The temporary support, usually a wooden scaffolding, supporting the materials of an arch during its construction.

Centi, (sen'ti). [The French word.] Centimetre=$\frac{1}{100}$ of a metre=·3937 inches; Centigram=$\frac{1}{100}$ of a gram; Centiare=$\frac{1}{100}$ of an are; Centilitre=$\frac{1}{100}$ of a litre; Centime=$\frac{1}{100}$ of a franc.

Centigrade scale, (sen'ti-grād). [The French word.] In which the freezing point of water is 0°, and the boiling point 100°, the distance between these being divided into 100 equal parts or degrees

Centipedes, (sen'ti-pēdz). [*Centipeda*, the Latin word.] Small animals belonging to Annulosa, having a pair of legs to each somite of the body

Centranthus, (sen-tran'thus). [Gk *kentron*, spur; *anthos*, flower]=Spur valerian.

Centre, (sen'tẹr). [*Centrum*, the Latin word.] *C. of forces*: the point of application of a number of forces; the point at which a number of parallel forces may be counter-

acted by a single force. *C. of gravity.* the point of a body round which its weight is balanced.

Centrifugal force, (sen-trif'u-gal). [L. *centrum*, centre; *fugio*, I fly from.] The force which impels a revolving body away from the centre of its orbit.

Centripetal force, (sen-trip'e-tal). [L. *centrum*, centre; *peto*, I seek.] The force which impels a revolving body towards the centre of its orbit.

Centriscus, (sen-tris'kus). A fish having a tubular snout. *C. scolopax*=Bellows-fish=Trumpet-fish.

Centroscymnus, (sen-tro-sim'nus). *C. cælolepis:* a shark found off the coast of Portugal, at a depth of more than 400 fathoms.

Centrum, (sen'trum). [The Latin word.] The main body of a vertebra.

Centunculus, (sen-tun'ku-lus)=Bastard pimpernel: a small herb belonging to Primulaceæ.

Cephalanthera, (sef-a-lan'ther-a). [Gk. *kephale*, head; and *anthos*, flower.]=Helleborine.

Cephalaspis, (sef-a las'pis). [Gk. *kephale*, head; *aspis*, shield.]=Buckler head: a ganoid fish, known only by remains found in Old Red Sandstone.

Cephalic, (se-fal'ik). [Gk. *kephale*, head.] relating to the head. *C. index:* the ratio of the transverse to the longitudinal diameter of the skull.

Cephalo, (sef'al-o). [Gk. *kephale*, head.] A prefix meaning head. *C. branchiata*=Tubicola, *q.v.* *C. thorax*=The amalgamated head and thorax in Arachnida and Crustacea.

Cephalophora, (sef-al-of'o-ra). [Gk. *kephale*, head; *phoreo*, I bear.] 1. Used by De Blainville and Burmeister as a term for Cephalopoda and Gasteropoda. 2. A primary division of Mollusca, also called Encephala and Odontophora. 3. A plant belonging to Asteraceæ.

Cephalopoda, (sef-al-op'o-da). [Gk. *kephale*, head; *pous*, foot.]=Cuttle-fishes, &c.: marine carnivorous animals, forming the highest division of Mollusca, divided into *Dibranchiata*, more highly, and *Tetrabranchiata* less highly organised, the foot is developed into long tentacles, often with suckers. Placed by M'Leary between Vertebrata and Mollusca.

Cephalotaceæ, (sef-al-o-tā'se-ē). [Cephalotus the only genus.] Stemless marsh plants found in New Holland.

Cepheus, (sē'fe-us). [Classical.] One of the northern constellations.

Ceramiaceæ, (ser-a-mi-ā'se-ē). [Ceramium, *q.v.*]=Rose-tangles: rose-coloured sea-weeds, multiplying by tetraspores, belonging to Algales.

Ceramium, (ser-ā'mi-um). [Gk. *keramion*, pitcher.]=Rose-tangle: the typical genus of Ceramiaceæ.

Cerargyrite, (ser-ar'ji-rīt). [Gk. *keras*, horn; Argentum, *q.v.*]=Horn-silver: an ore of silver, chiefly chloride.

Cerasin, (ser'a-sin). [Cerasus, *q.v.*]=Cherry-tree gum: chiefly calcic metagummate.

Cerastium, (se-ras'ti-um). [Gk. *keras*, horn; shape of capsule.]=Mouse-ear chickweed: an herb with white flowers, belonging to Caryophyllaceæ.

Cerasus, (ser'a-sus). [L. *cerasum*, cherry.]=Cherry: a plant, with edible fruit, belonging to Drupaceæ.

Ceratodermia, (ser-a-to-der'mi-a). [Gk *keras*, horn; *derma*, skin.] De Blainville's term for Echinodermata.

Ceratodus, (se-rat'o-dus). Barramunda: chiefly known by fossil teeth; but found alive in Queensland in 1870: a mud-fish, resembling the Lepidosiren.

Ceratophyllaceæ, (ser-a-to-fil-lā'se-ē). [Ceratophyllum, *q.v.*]=Horn-worts: water herbs, in ditches, belonging to Urticales.

Ceratophyllum, (ser-a-to-fil'lum). [Gk. *keras*, horn; *phyllon*, leaf.]=Horn-wort: the only genus of Ceratophyllaceæ; named from the shape of the petals.

Cercaria, (ser-kā'ri-a). [Gk *kerkos*, tail.] The nurse form of fluke-worms, found in stagnant pools; larva of distoma.

Cercocebus, (ser-ko-sē-bus). [Gk. *kerkos*, tail; cebus, *q.v.*] Malbrouck monkey, Green monkey, &c.; separated from Cercopithecus.

Cercoleptes, (ser-ko-lep'tēz). [Gk. *kerkos*, tail; *leptos*, slender.] Arboreal plantigrade carnivorous animals, with long flexible tails; found only in Amazonian forests.

Cercopithecus, (ser-ko-pith-ē'kus). [Gk. *kerkos*, tail; *pithekos*, ape.]=Green monkey: a small long-tailed monkey.

Cerebellum, (ser-e-bel'lum). [The Latin word.] The hinder part of the brain, above the medulla oblongata.

Cerebral, (ser'e-bral). [Cerebrum, *q.v.*] Related to the brain. *C. ganglia.* nerve-centres in the head, or near the mouth in lower animals. *C. hemispheres.* the upper portion of the brain, which is divided into two hemispheroidal portions. *C. nerves:* twelve pairs of nerves proceeding from the brain, to the nose, eyes, face, ears, tongue, &c.

Cerebration, (ser-e-brā'shun). [Cerebrum, *q.v.*] The influence of the brain upon the nerves in causing action.

Cerebric acid, (se-reb'rik). [Cerebrum, *q.v.*] Impure protagon, *q.v.*; an acid substance found in the brain.

Cerebro-spinal, (ser-e-brō-spī'nal). [Cerebrum and Spinal, *q.v.*] Related to the brain and spinal cord. *C. axis:* the brain and spinal cord, lying in the cavities of the skull and spinal column. *C. centres:* the brain and spinal cord, from which the nerves proceed. *C. system:* the brain and spinal cord, with the cerebral and spinal nerves.

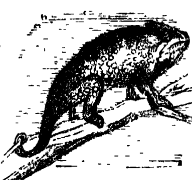
Cerebrum, (ser'e-brum). [The Latin word.]=the brain: the centre of consciousness and volition.

Cerene, (sē'rēn). [L. *cera*, wax.]=$C_{27}H_{56}$=Paraffin: a hydrocarbon, obtained from wax by distillation.

Ceres, (se'rez). [Classical.] One of the Asteroids, *q.v.*

Cereus, (sē're-us) [L. *cereus*, wax-like, pliant.] Plants belonging to Cactaceæ.
Cerin, (sē'rin). [L. *cera*, wax.]=Cerotic acid $=C_{27}H_{54}O_2$: an acid obtained from wax.
Cerite, (sē'rit). [Cerium, *q.v.*] A silicate mineral: the usual ore of cerium.
Cerite metals=Cerium, Lanthanum, Didymium, Yttrium.
Cerithium, (se-rith'i-um). [Gk. *keration*, a horn.] A gasteropod, known by fossil remains in Oolitic rocks.
Cerium, (sē'ri-um). [Ceres.]=Cer: one of the earth metals, very rare, found in cerite.
Cerolein, (sē'rō-lin). [L. *cera*, wax.] A greasy acid body, found in bees-wax.
Ceroxylon, (sē-rok'si-lon) [L. *cera*, wax; Gk. *xylon*, wood.]=A tree belonging to Palmaceæ. *C. andicola*=Wax-palm.
Cerotic acid, (sē-rō'tik). [L. *cera*, wax.]= $C_{27}H_{54}O_2$: a crystalline acid, forming about one-quarter of bees-wax.
Cerussite, (se-rus'sit). [L. *cerussa*.]=White-lead ore: chiefly carbonate of lead, $PbCO_3$: a mineral of the lead group.
Cervidæ, (ser'vi-dē). [Cervus, *q.v.*]=Deer; animals belonging to Ruminantia, the males of which have solid deciduous horns.
Cervus, (ser'vus). [The Latin name.]=Stag, &c.; the type of Cervidæ, *q.v.*
Cestodes, (ses-tō'dēz) [Gk. *kestos*, girdle.] Used by Siebold for a sub-division of Helminthes.
Cestoid, (ses'toid). [Gk. *kestos*, girdle; *eidos*, form.] Tape-like, resembling the tape-worm. *C. entozoa*=Cestoidea, *q.v.*
Cestoidea, (ses-toi'de-a). [Gk. *kestos*, girdle; *eidos*, form.]=Tæniadæ, *q.v.* Tape-worms.
Cestracion=Port-Philip shark. A fish belonging to Cestraphori, the only one known to be still extant.
Cestraphori, (ses-traf'o-ri). [Gk. *kestra*, weapons, *phero*, I bear.] Shark-like fishes, with large fin-spines, known chiefly by fossil remains; named from a number of grinding teeth.
Cetacea, (sē-tā'she-a). [Cetus, *q.v.*] Aquatic mammalian animals, with a fish-like form, with fin-like fore-limbs only, including whalebone whales, dolphins, &c.
Cetene, (sē-tēn'). [L. *cetus*, whale.]=Cetylene $=C_{16}H_{32}$: a liquid hydrocarbon, obtained from spermaceti.
Ceteosaurus, (sē-te-o-saw'rus). [L. *cetus*, whale; *saurus*, lizard.] A very large reptile, 70 feet long, possibly of terrestrial habits, feeding on river-side vegetation, remains of which are found in Oolite and Cretaceous rocks.
Cetin, (sē'tin). [L. *cetus*, whale.]= $C_{32}H_{64}O_2$ =Pure spermaceti, *q.v.*
Cetraria, (sē-trā'ri-a). [L. *cetra*, buckler; shape of receptacle.] A lichen belonging to Parmeliaceæ. *C. islandica*=Iceland moss.
Cetus, (sē'tus). [The Latin name.] 1.=The Whale: one of the southern constellations, the chief stars of which are Menkar, Diphda, and Mira Ceti. 2.=Whale: a large marine animal, belonging to Mammalia; the type of Cetaceæ.
Cetyl, (sē'til). [Cetin, *q.v.*]=Ethal, *q.v.*
Cetylic acid=Palmitic acid, *q.v.*
Chabazite, (kab'a-zīt)=Emelinite: a mineral of the Zeolite group; a silicate of alumina and lime, found in volcanic rocks and metallic veins.
Chacma=Cynocephalus porcarius: a baboon with long muzzle, living in troops amongst rocks.
Chærophyllum, (kē-ro-fil'lum). [Gk. *chairo*, to rejoice, *phyllon*, leaf.]=Chervil: a plant belonging to Apiaceæ, named from the odour of its leaves.
Chætodon, (kē'to-don). [Gk. *chaite*, hair; *odous*, tooth.] A fish with long hair-like teeth, the body almost circular, and long snout.
Chætognatha, (kē-tog'na-tha). [Gk. *chaite*, bristle; *gnathos*, jaw.]=Sagitta: one genus only: small animals, belonging to Annulosa, with transparent elongated bodies and rounded heads.
Chætophora, (ke-tof'o-ra) [Gk. *chaite*, bristle; *phero*, I bear.]=Earthworms, &c.: a sub-division of Annelida.
Chætopoda, (kē-top'o-da). [Gk *chaite*, bristle; *pous*, foot.] De Blainville's term for Annelides.
Chætopodes. Used by Siebold for a sub-division of Annulati.
Chaffinch, (chaf'finsh). [Finch, *q.v.*]=Fringilla cœlebs: a song-bird.
Chailletiaceæ, (shā-let-i-ā'se-ē). [M. Chaillet.] =Chailletiads: shrubs and trees belonging to Rhamnales.
Chain, (chān). [*Catena*, the Latin word.] An instrument for land measurement. Gunter's chain=66 feet=4 perches: a square chain= $\frac{1}{10}$ acre. Ordinary chain=100 feet.
Chalcedony, (kal-sed'o-ni). [The town of Chalcedon.] An amorphous mineral substance, chiefly silica.
Chalcopyrite, (kal-ko-pi-rī'te) [Gk. *chalkos*, copper; Pyrites, *q.v.*]=Copper pyrites: one of the copper group of minerals, with tetragonal crystallization, chiefly sulphide of copper and iron, the common ore of copper.
Chalcocite, (kal'ko-sit). [Gk. *chalkos*, copper.] One of the minerals of the copper group, crystallising in rhombs, chiefly sub-sulphide of copper, Cu_2S: a valuable ore of copper.
Chalk, (chawk) [*Cealc*, the A.-S. name.] = Upper Cretaceous: beds of enormous extent and thickness, the highest of the Secondary series. An earth consisting chiefly of minute shells. *White C.*=Pure carbonate of lime. *C. stones:* white concretions, chiefly of sodium and uric acid.
Chalybeate waters, (ka-lib'e-āt). [Chalyps, *q.v.*] Water containing salts of iron in solution, as at Tunbridge, Harrogate, &c.
Chalybite, (kal'i-bit). [Chalyps, *q.v.*] One of the iron group of minerals, crystallising in hexagons, chiefly carbonate of iron.
Chalyps, (kal'ips). An old name for steel, derived from the Chalybes, a people living near the Black Sea, the first smelters of iron.
Chamælauciaceæ, (cha-mē-law-si-ā'se-ē). [Gk. *chamai*, dwarf; *leuchos*, poplar.]=Fringe myrtles: fragrant bushes belonging to Myrtales.

Chameck. A spider monkey. *v.* Ateles.


Chameleon.

Chameleon, (ka-mēl'-yun). [The Latin name.] A sluggish lizard-like reptile, found in Africa, with a prehensile tail, and a vermiform extensile tongue, feeds chiefly on insects.

Chamois, (sham'waw). [The French name.] 1 =Rupicapra tragus: an antelope, found chiefly in the Alps. 2. The soft leather prepared from its skin.


Chamois.

Chamomile, (kam'o-mīl). [Cor. of Chamomilla.] =Anthemis nobilis: a plant belonging to Asteraceæ. *Corn C.*=Anthemis arvensis. *Wild C.*=Matricaria chamomilla.

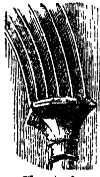
Chancel, (chan'sel). [*L. cancelli*, lattice-work.] The part of a church in which the altar is placed, also used for any portion of a church which is parted off for use as a private chapel.

Chandelier tree=Pandanus candelabrum: a tree with widely-spread branches terminating in bunches of leaves.

Channels, (chan'nelz). [F. *canal*, pipe].= Chains: planks to which the shrouds are fastened.

Chaph=β Cassiopeiæ: a star.

Chaptrel, (chap'trel). [*Chapiteau*, the French word.] The capital or head of a pillar supporting one side of an arch.


Chaptrel.

Chara, (kā'ra). 1. An aquatic plant, fossil remains of which are common in fresh water strata. 2. Equisetum fluviatile. 3. One of the hunter's dogs. *v.* Asterion and Chara.

Characeæ, (ka-rā'se-ē). [Chara, *q.v.*]=Charads: submerged plants growing erect, belonging to Algales, also considered as forming a primary division of plants.

Characteristic. The integral part of a logarithm.

Charadriadæ, (kar-ā-drī'a-dē). [Charadrius, *q.v.*] A family of wading birds, including the Plover, Lapwing, &c.

Charadrius, (ka-rā'dri-us). [The Latin name.] =Plover: a wading bird.

Charcas. An American race.

Charcoal, (char'kōl)=Amorphous carbon. *Wood C.:* obtained by heating wood, so as to eliminate all its gaseous and liquid constituents. *Animal C.*=Ivory black, obtained by heating bones.

Charioteer=Auriga, *q.v.*

Charles's Wain=Great Bear=**Ursa Major,** *q.v.*

Charlock, (char'lok)=Brassica sinapistrum= Sinapis arvensis.

Chase, (chās). The fore part of a gun, between the trunnions and the muzzle.

Chasmorhynchus. *v.* Bell-bird.

Chaucas. An American race.

Chebeck=Zebeck, *q.v.*

Cheek pouches. In the faces of some monkeys, especially in Cynopithecinæ; none in Cebidæ or Lemuroidea.

Cheese, (chēz). [*Cese*, the A.-S. word.] Solidified curd of milk.

Cheese-mite=Acarus domesticus: a minute spider-like animal.

Cheilostomata, (kīl-os-tom'a-ta). Marine Polyzoa, belonging to Gymnolæmata.

Cheiranthus, (kīr-anth'us). [Gk. *cheir*, hand; *anthos*, flower.]=Wall-flower: an herb belonging to Brassicaceæ.

Cheirogaleus. A half-ape, known only in Madagascar.

Cheiromys, (kī'ro-mis)=Sciurus Madagascariensis=Aye, aye, *q.v.*

Cheiropoda, (kī-rop'o-da). [Gk. *cheir*, hand: *pous*, foot.]=Bimana, Quadrumana, and Pedimania: animals having hands and opposable thumbs.

Cheiroptera, (kī-rop'ter-a). [Gk. *cheir*, hand; *pteron*, wing.]=Bats: animals belonging to Mammalia, marked by the fore limbs being longer than the hind ones, and being joined to the body by a wing-like expansion of the skin.

Cheirotherium, (kī-rō-thē'ri-um). [Gk. *cheir*, hand; *therion*, beast.]=Hand-beast: an animal belonging probably to either Batrachia or Marsupiala, footprints only of which, resembling impressions of a hand, are found in Lower Trias.

Chela, (kē'la). [Gk. *chele*, claw.]=Nipping-claws: prehensile limb-terminations in lobsters, crabs, &c.

Chelæ, (kē-lē). Plural of chela, *q.v.*

Chelate, (kē'lāt). [Chela, *q.v.*] Having chelæ.

Chelicerœ, (kē-lis'e-rē). [Gk. *chele*, claw; *keras*, horn.] The pincers in which the mandibles, or antennæ, of the scorpion terminate.

Chelidonium, (kel-i-dō'ni-um). [Gk. *chelidon*, swallow.]=Celandine: an herb belonging to Papaveraceæ.

Chelifer, (ke'li-fer). [Gk. *chele*, claw; *phereo*, I carry.]=Book scorpion: small scorpion-like animals, belonging to Arachnida.

Cheloneæ, (ke-lō'ne-ē). [Gk. *chelone*, tortoise.] Plants belonging to Scrophulariaceæ.

Chelonia, (ke-lō'ni-a). [Gk. *chelone*, tortoise.] =Tortoises and Turtles: reptiles having a bony exoskeleton, and also horny plates, formed from the epidermis, called tortoise-shell.

Chelonidæ, (ke-lō'ni-dē)=Tiger-moths: insects belonging to Lepidoptera.

Chemical, (kem'i-kal). [Chemistry, *q.v.*] Related to chemistry. *C. affinity:* the attraction between unlike substances, which acts only when they are in contact, or very nearly so. *C. analysis:* the decomposition of compound substances for the purpose of ascertaining their constituents. *C. combination:* the intimate union of two substances to form a third, usually accompanied by sensible heat. *C. equivalents:* the relative amounts

of two substances which will combine with any given quantity of another substance. *C. formulæ:* the symbolic expressions of chemical composition, as H_2O for water, &c. *C. harmonicon:* musical notes produced by burning a stream of hydrogen in a series of open tubes of different diameters. *C. hygrometer:* v. Hygrometer. *C. nomenclature:* v Tables.

Chemistry, (kem'is-tri). [Copt. *chemia*, hidden.] The science of the nature of elementary substances, and the laws which govern their combination.

Chenopodales, (ken-op-o-dā'lēz). [Chenopodium, *q.v.*] A primary division of Hypogynous Exogens.

Chenopodiaceæ, (ken-o-pod-i-ā'se-ē). [Chenopodium, *q.v.*]=Beet, spinage, &c.: herbs and shrubs, the type of Chenopodales.

Chenopodium, (ken-o-pod'i-um). [Gk. *chen*, goose; *pous*, foot.]=Goosefoot: the typical genus of Chenopodiaceæ.

Cherry, (cher'ri). [*Cerasus*, the Latin word.] =Cerasus: a plant belonging to Prunus.

Chert, (chert). [Welsh, *cellt*, flintstone.] A compound of flint and limestone.

Chervil, (cher'vil)=Chærophyllum; also=Anthriscus cerefolium.

Chessylite, (ches'si-līt)=Azurite: one of the copper group of minerals, resembling malachite, with oblique crystallization; used as a copper ore.

Chestnut, (chest'nut). [*Castanea*, the Latin name.]=Castanea: a tree belonging to Corylaceæ. *Sweet C.* =Castanea. *Horse C.*= =Æsculus.

Chetodon=Chætodon, *q.v.*

Chevron bones, (shev'ron) [F. *chevron*, rafter.] Arched bones, branching from the vertebral column.

Chevrotain, (shev'ro-tān). [The French name.] =Moschus Javonicus: a variety of the Musk-deer; belongs to Ruminantia.

Chiaroscuro, (kē-a-ro-skoo'ro). [It. *chiaro*, light, *oscuro*, dark.] The distribution of light and dark colours in paintings.

Chiasma, (kī-as'ma). [Gk. *chiasma*, a crossing.] A crossing of two portions of the optic nerve.

Chiastolite, (kī-as'to-līt). [Gk. *chiastos*, crossed; *lithos*, stone.] A softer variety of Andalusite; named from the crystals usually being imbedded in slate, so as to form crosses.

Chick, (chik). [The sound it makes.] The young of domestic poultry.

Chickweed, (chik'weed).=Stellaria media: an herb belonging to Caryophyllaceæ.

Chicory, (chik'o-ri). [*Cichorium*, the Latin name.]=Cichorium: an herb belonging to Asteraceæ.

Chigoe=Pulex penetrans: an American flea-like insect.

Chills, (chils). Moulds of metal in which iron is cast.

Chillesford beds. [Chillesford, in Suffolk.] v. Aldeby beds.

Chilognatha, (kī log'na-tha). [Gk. *cheilos*, lip; *gnathos*, jaw.]=Diplopoda=Millipedes: animals belonging to Myriapoda.

Chilopoda, (kī-lop'o-da). [Gk. *cheilos*, lip; *pous*, foot.]=Syngnatha=Centipedes: a division of Myriapoda: carnivorous worm-like animals, with broad depressed body segments, each with a pair of limbs.

Chimæra, (ki-mē'ra). [Gk. *chimaira*, monster.] 1.=Holocephali: a shark-like fish. 2. A division of Infusoria.

Chimpanzee, (chim-pan'zē)=Troglodytes: one of the anthropoid apes, having long arms, large thumbs, and a wrinkled face; found in Africa.


Chimpanzee

China, (chī'na). *C. clay* =Kaolin, *q.v.*: a mineral substance, chiefly silicate of alumina. *C. aster* = Callistema: *C. bark*=Buena hex. India; *C. rose*=Hibiscus rosa sinensis.

Chinchilla, (chin-chil'la). [The Spanish name.] A squirrel-like animal, belonging to Rodentia.

Chine, (chīn). In ships, the hollowed part of the water-way, above deck.

Chinese, (chī-nez'). *C. cherry*=Prunus pseudocerasus. *C. crab*=Pyrus spectabilis. *C. indigo*=Isatis indigotica. *C. stones*=Agalmatolite, *q.v.* *C. tree*=Pæonia moutan. *C. wax*, 1.=$C_{54}H_{108}O_2$: obtained from bees-wax; 2. A secretion from a tree grown in China. *C. windlass*=Differential screw, *q.v.*

Chioties. A succulent climbing plant of Mexico, with a pearl-like fruit.

Chironectes, (kī-ro-nek'tēz). 1.=Yapock=Didelphus palmata: a semi-aquatic opossum, with webbed feet. 2.=Cheironectes=Frog-fishes.

Chirotes, (kī'ro-tes). A small lizard, having front limbs only, belonging to Lacertilia; found in Mexico.

Chitin, (kī-tin). [Gk. *chiton*, mantle.]= $C_{17}H_{28}N_2O_{11}$: a horny substance forming the covering of many insects and crustaceans.

Chiton, (kī'ton). A molluscous animal, with multivalve shell, belonging to Gasteropoda.

Chives, (chīvz). [*Cives*, the French name.]= Allium schœnoprasum: an herb belonging to Liliaceæ.

Chladni, Professor, of Germany. *C. figures:* regular figures, formed by fine sand strewn on vibrating plates or membranes. *C. plates:* of glass or metal, of various regular forms. *C. tonometer;* a vibrating strip of metal, by which the number of vibrations required to produce a given note is ascertained.

Chlænaceæ, (klē-nā'se-ē)=Chlenads: shrubs and trees of Madagascar, with showy red flowers, belonging to Geranialos; found only in Madagascar.

Chloanthite, (klo-an'thīt)=White nickel; a mineral of the nickel group, crystallising in cubes, chiefly arseniate of nickel, $NiAs_2$

Chlora, (klō'ra). [Gk. *chloros*, green.]=Yellow-wort=Yellow centaury: an herb belonging to Gentianaceæ.

Chloracetic acid, (klō-ra-sē'tik). [*Chlorine* and *acetic* acid, *q.v.*]=Acetic acid, in which 3H is replaced by 3Cl.

Chloral, (klō'ral). [*Chlor*ine and *al*cohol.]= C_2Cl_3HO. an oily fluid, which solidifies into a white solid. *C. hydrate*=$C_2HCl_3O.H_2O$. a narcotic which reduces animal temperature, and also induces hyperæsthesia.

Chloraniline, (klō-ran'i-lin). [*Chlor*ine and *aniline*, *q.v.*]=$C_6H_6ClN_2$=Aniline in which one atom of hydrogen is exchanged for chlorine.

Chloranthaceæ, (klō-ran-thā'se-ē). [Chloranthus, *q.v.*]=Chloranths: tropical aromatic herbs and shrubs with jointed stems, belonging to Piperales.

Chloranthus, (klō-ran'thus). [Gk. *chloros*, green, *anthos*, flower.] The typical genus of Chloranthaceæ.

Chlorates, (klō'rāts). [Chloric acid, *q.v.*]= $M'ClO_3$: monobasic salts, formed by chloric acid combined with bases.

Chlorhydric, (klor-hī'drik)=Hydrochloric, *q.v.*

Chlorhydrin, (klor-hī'drin). $C_3H_7ClO_2$: an ether obtained by acting on glycerin with hydrochloric acid.

Chloric acid, (klō'ric). [Chlorine, *q.v.*]=Hydric chlorate=$HClO_3$: a liquid, faintly odorous, and powerfully acid, which is decomposed by light.

Chlorides, (klō'rīdz). [Chlorine, *q.v.*] Compounds of chlorine with other substances. *Cl. of N.*: a liquid which is very explosive when heated, or in contact with combustible substances=HCl_2N Cl_3N. *Cl. of Hg*=1. Calomel=Hg_2Cl_2 2 Corrosive sublimate= $HgCl_2$. *Cl. of Na*=Common salt=NaCl= Muriate of soda: an antiseptic crystalline substance found in the earth, and also dissolved in sea-water.

Chlorimetry (klō-rim'e-tri). [Chlorine, *q.v.*; Gk. *metron*, measure.] The estimation of the amount of chlorine present in a compound.

Chlorination, (klō-rin-ā'shun) A method of extracting gold and silver from the ore by conversion into chlorides, which are afterwards decomposed.

Chlorine, (klō'rin). [Gk. *chloros*, green.]=Cl': one of the Halogens, formerly called oxymuriatic acid. A heavy, transparent, greenish gas, with a strong irritating odour, resembling oxygen in its character; much used for its properties of bleaching and disinfecting.

Chloriodoform, (klō-ri-od'o-form). [*Chlor*ine and *iodoform*, *q.v.*]=C_2HCl_2I: an aromatic liquid, a compound of chlorine and iodoform.

Chlorisathyd, (klō'ris-a-thid) [*Chlor*ine and *isathyd*, *q.v.*]=$C_8H_5ClNO_2$=Isathyd, in which one equivalent of hydrogen is replaced by one of chlorine.

Chlorisatin = $C_8H_4ClNO_2$ A crystallisable substance, obtained by the action of chlorine upon indigo.

Chlorite, (klō-rīt). [Chlorine, *q.v.*]=Peach: a mineral of the mica group, a silicate of magnesia, alumina, and iron; usually green.

Chlorites, (klō'rītz). [Chlorine, *q.v.*]=$M'ClO_2$: compounds of chlorous acid with bases.

Chloritic series, (klō-rit'ik). [Chlorine, *q.v.*] =Upper Greensand: beds belonging to the Upper Cretaceous series.

Chloroform, (klō'ro-form). [*Chlor*ine and *formyl*, *q.v.*]=Trichloride of formyl=$CHCl_3$: an odorous volatile liquid, much used as an anæsthetic.

Chlorophane, (klō'ro-fān). [Gk. *chloros*, green; and *phaino*, I shine.] A massive variety of fluor-spar, which, when heated, is phosphorescent.

Chlorophyll, (klō'ro-fil). [Gk. *chloros*, green; *phyllon*, leaf] A colouring matter in leaves of plants, yellow in the leaf, becomes green when exposed to light.

Chlorous acid, (klō'rus). [Chlorine, *q.v.*]= $HClO_2$=Hydric chlorite: an acid, the salts of which are chlorites.

Chloroxylon, (klor-ok'si-lon). [Gk. *chloros*, green; *xylon*, wood.] A plant belonging to Cedrelaceæ.

Chocolate, (chok'o-lāt). [A corruption of the Mexican name.] The nuts of Theobroma Cacao roasted and ground.

Chœtognatha, (kē-tog'nath-a)=Sagitta: small transparent marine animals, belonging to Annulosa.

Choke-damp. Carbonic acid when accumulated in mines, &c.

Cholepyrrhin, (ko-le-pī'rin)=Biliphæin: an amide of biliverdin; the brown colouring matter of the bile.

Cholesteric acid, (ko-les'ter-ik). [Cholesterin, *q.v.*]=$C_8H_{10}O_5$: a solid resinous acid substance obtained from cholesterin.

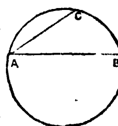
Cholesterin (ko-les'ter-in). [Gk. *chole*, bile; *stear*, suet.]=$C_{26}H_{44}O$: a fatty crystalline substance found in the bile and also in blood.

Chondrin, (kon'drin). [Gk. *chondros*, cartilage.] A gelatinous liquid obtained from cartilage.

Chondrostei, (kon-dros'te-i). [Gk. *chondros*, cartilage.] Used by Siebold for a subdivision of fishes.

Chondropterygii, (kon-drop-ter-ij'i-ī). [Gk. *chondros*, cartilage; *pteryx*, fin.]=Cartilaginous fishes.

Chord, (kord). [*Chorda*, the Latin name.] 1. A straight line joining two points of a circle. 2. Used generally for any stretched string, especially of a musical instrument. 3. An harmonious combination of musical tones.



Chord.

Chorda, (kor'da). [The Latin word] Used for cord-like nerves or muscles. *C. dorsalis*=Notochord, *q.v.* *C. tendineæ*: strong fine tendons closing the valves in the heart. *C. tympani*: a sub-division of the seventh or facial nerve.

Chorion, (kor'i-on). [Gk. *chorion*, skin.] The membrane in which a vertebrate fœtus is enclosed, which develops into the placenta.

Chorisis, (kō'ris-is). [Gk. *choriso*, I separate.] The separation of an organ into two or more, as of a leaf into leaflets.

Choroid, (ko'roid). [Chorion, *q.v.*; Gk. *eidos*, form.] Resembling the chorion in character. *C. coat*: a vascular membrane, black on the

inner side, lining the sclerotic portion of the eyeball. *C. plexus:* the vascular margins of the vellum of the brain.

Chough, (chuf). A variety of the crow.

Christmas rose=Helleborus niger.

Christopher, Herb=Actæa, *q.v.*

Chromates, (krō'māt*z). [Gk. *chroma*, colour.] $=M'_2CrO_4$: salts formed by combination of chromic acid and bases.

Chromatic, (krō-mat'ik). [*Chromaticus*, the Latin word.] Relating to colour. *C. aberration:* the formation of images having the edges tinged with colours, owing to the refraction of the light passing through lenses. *C. scale:* a series of thirteen notes, including the two notes forming an octave and the intermediate tones and semitones.

Chromatophores, (krō-mat'o-fōrz). [Gk. *chroma*, colour; *phoreo*, I carry.] Small pigment sacs, especially those in cuttle fishes.

Chrome, (krōm). [Chromium, *q.v.*] An old name for chromium ore. *C. ironstone*=$FeOCr_2O_3$: the chief ore of chromium. *C. yellow*=$PbCrO_4$=Chromate of lead.

Chromic acid, (krō'mik). [Chromium, *q.v.*] 1.=H_2CrO_4: a deliquescent solid. 2.=CrO_3: now called chromic anhydride.

Chromite, (krō'mit). [Chromium, *q.v.*] A mineral, chiefly oxide of chromium: an ore of iron.

Chromium, (krō'mi-um). [Gk. *chroma*, colour.]=Cr^{vi}: one of the *iron-like metals:* rare, used as a dye material.

Chromosphere, (krō'mo-sfēr). [Gk. *chroma*, colour; *sphaira*, sphere.] The gaseous envelope of the sun.

Chronometer, (kro-nom'e-ter), [Gk. *chronos*, time; *metron*, measure.] 1. Any instrument which measures the lapse of time. 2. An instrument used, chiefly on shipboard, to indicate the exact time at some given place.

Chronoscope, (kron'o-skōp). [Gk. *chronos*, time; *scopeo*, I see.] An apparatus for measurement of the velocity of projectiles and falling bodies.

Chroococcaceæ, (kro-o-kok-ā'se-ē). A subdivision of Algæ, comprising those which bear the lichen fungi.

Chrysalides. Plural of Chrysalis, *q.v.*

Chrysalis, (kris'a-lis). [Gk. *chrysos*, gold.]= =Nymph=Pupa: in holometabolic insects, the intermediate state between the larva and perfect insect, often gold coloured.


Chrysalis.

Chrysanthemum, (kris-an'the-mum). [Gk. *chrysos*, gold; *anthemon*, flower.] Corn-marigold, &c.: herbs belonging to Asteraceæ.

Chrysene, (krī'sēn). [Gk. *chryseos*, yellow.] $=C_{18}H_{12}$. A yellow crystalline substance obtained from coal-tar.

Chrysobalanaceæ, (kris-o-bal-an-ā'se-ē). [Chrysobalanus, *q.v.*]=Chrysobalans: tropical trees and shrubs belonging to Rosales.

Chrysobalanus, (kris-o-bal'a-nus). [Gk. *chrysos*, gold; *balanos*, acorn.]=Cocoa-plum: the typical genus of Chrysobalanaceæ.

Chrysoberyl, (kris'ob-e-ril). [Gk. *chrysos*, gold, *beryllos*, beryl.] A mineral, chiefly alumina and glucina.

Chrysocolla, (kris-o-kol-la). [Gk. *chrysos*, gold.] One of the copper group of minerals, amorphous, chiefly silicate of copper, somewhat resembling malachite.

Chrysolite, (kris'o-līt). [Gk *chrysos*, gold: *lithos*, stone.]=Peridot: a fine variety of Olivine, of gold-green colour.

Chrysophyll, (kris'o-fil). [Gk. *chrysos*, gold; *phyllon*, leaf.] A golden colouring matter found in leaves.

Chub, (chub)=Leuciscus cephalus: a fish belonging to Cyprinidæ.

Churchyard beetle=Blaps mortisaga.

Chylaqueous fluid, (kī-lak'we-us). [Chyle, *q.v.*] A liquid filling the body cavity of Asterias, &c.

Chyle, (kīl) [Gk. *chylos*, juice.]=Lymph: modified food: an alkaline milky fluid which passes through the intestines, during which passage the nutritious portions of it are absorbed by the walls of the intestines.

Chyme, (kīm). [Gk. *chymos*, juice.] The food after digestion in the stomach, which passes into the intestines in the form of a thick acid fluid.

Cicada, (si-kā'da). [The Latin name.] An insect belonging to Hemiptera.

Cicatricula, (sik-a-trik'u-la). [L. *cicatrix*, scar.]=Tread: an opaque spot on the surface of a yelk.

Cicely=Myrrhis: a plant belonging to Apiaceæ.

Cichoraceæ, (sik-o-rā'se-ē). [*Cichorium*, chicory.] Lettuce, chicory, &c., a sub-division of Asteraceæ.

Ciconia, (si-kō'ni-a), [The Latin name.]= Stork: a marsh bird, with long legs and bill, belonging to Grallatores.

Cicuta, (si-kū'ta). [The Latin name.]=Water-hemlock, &c.: an herb belonging to Apiaceæ.

Cigana=Opisthocomus cristatus: a gallinaceous bird of Brazil.

Cilia, (sil'i-a). [L. *cilium*, eyelid.] Small filaments on the surface of epithelial cells, often the means of locomotion in the lower animals.

Ciliary, (sil'i-a-ri). [Cilia, *q.v.*] Filamentary. *C. ligament:* in the eye, connecting the iris and capsule. *C. muscle:* attached to the choroid of the eye. *C. processes:* the anterior termination of the choroid.

Ciliati, (sil-i-ā'ti). [Cilia, *q.v.*] 1. Leuckart's term for Bryozoa and Rotifera, considered as a division of Vermes. 2. A division of Infusoria, having abundance of vibratile cilia.

Cimex, (si'meks). [The Latin name.]=Bug: an insect belonging to Hemiptera.

Cimicifuga, (sī-mi-sif'ū-ga). [L. *cimex*, bug: *fugo*, I drive away.]=Bug-wort: a fœtid plant belonging to Ranunculaceæ.

Cinchona, (sin-kō'na). [Countess of Cinchon. Or Quinquina, the native name.] The typical genus of Cinchonaceæ: the bark is much used in medicine. *v.* Quinine.

Cinchonaceæ, (sin-kō-nā'se-ē). [Cinchona, *q.v.*] =Cinchonads: tropical herbs, shrubs, and trees belonging to Cinchonales.

Cinchonales, (sin-kō-nā'lēz). [Cinchona, *q. v.*] Dichlamydeous monopetalous plants, having a minute embryo and much albumen, forming a division of Epigynous Exogens.

Cinchonia, (sin-kō'ni-a). [Cinchona, *q.v.*] = $C_{20}H_{24}N_2O$: an alkaloid nitrile crystalline base, found in cinchona bark.

Cinchonicine, (sin-kō'ni-sīn). [Cinchona, *q.v.*] = $C_{20}H_{24}N_2O$: an alkaloid base obtained from cinchonine.

Cinchonidine, (sin-kō'ni-dīn). [Cinchona, *q.v.*] = $C_{20}H_{24}N_2O$: an alkaloid base obtained from cinchona bark.

Cinder-bed. A thick stratum in Upper Oolite, chiefly of shells resembling those of the oyster.

Cinematics=Kinematics, *q v.*

Cinnabar, (sin'na-bār). [*Cinnabaris*, the Latin name.]=Mercuric sulphide=HgS: the most common ore of mercury, crystallises in hexagons. *C. moth*=Callimorpha Jacobeæ.

Cinnamic acid, (sin'na-mik). [Cinnamon, *q.v.*] = $C_9H_8O_2$: a crystalline acid substance found in some balsams.

Cinnamide, (sin'na-mīd). [*Cinnamyl* and *amide*, *q v.*] = C_9H_9ON: ammonia in which one equivalent of hydrogen has been replaced by one of cinnamyl.

Cinnamol, (sin'na-mol). [Cinnamon, *q v.*] = C_8H_8=Styrolene=Styrol: a hydrocarbon found in cinnamic acid.

Cinnamon, (sin'na-mun). [*Kinamomon*, the Greek name.]=Cinnamomum: a plant belonging to Lauraceæ. *C., oil of*= C_9H_8O: chiefly cinnamyl hydride: a fragrant oily substance. *C. stone*: a variety of garnet.

Cinnamyl, (sin'na-mil). [Cinnamon, *q.v.*] = C_9H_7O: the radicle of cinnamon.

Cinquefoil, (singk'foil). [F. *cinque*, five; *feuille*, leaf.]=Potentilla: a plant belonging to Rosaceæ.

Cipoline, (sip'o-līn). A variety of marble containing talcose schist.

Circæa, (sėr-sē'a). [Circe.]=Enchanter's Nightshade: named from the hooks on the fruit which catch anything near it; a plant belonging to Onagraceæ.

Circæaceæ, (sėr-sē-ā'se-ē). [Circæa, *q.v.*]= Onagraceæ.

Circe, (sėr'sē). [Classical.] One of the Asteroids.

Circle, (sėr'kl). [L. *circulus*, a small circle.] A figure bounded by a line which is at all points of it the same distance from the centre of the figure.

Circulation, (sėr-ku-lā'shun). [L. *circulus*, circle]. *Greater C.*=Systemic C. *Lesser C.* =Pulmonary C.

Circulative animals. Oken's term for Mollusca.

Cirri, (sir'ri). [L. *cirrus*, a curl.] Twining appendages, tendrils, &c.

Cirripedia, (sir-ri-ped'i-a). [Cirri, *q.v.*: L. *pes*, foot.]=Acorn shells and barnacles: between Annulosa and Radiata; Crustacean animals of which some of the legs are cirrous, a subdivision of Pectostraca.

Cirro-cumulus, (sir-ro-kūm'u-lus). [Cirrus and Cumulus, *q.v.*] The name given to clouds of a kind between the cirrus and cumulus, having a resemblance to the scales of mackerel.

Cirrostomi, (sir-ros'to-mi). [Cirrus, *q v.*; and Gk. *stoma*, mouth.] Owen's term for the Lancelet, *q v.*

Cirro-stratus, (sir-ro-strā'tus). [Cirrus and Stratus, *q.v.*] Clouds intermediate between the cirrus and stratus.

Cirrus, (sir'rus). [L. *cirrus*, curl.] 1. Small light clouds, usually high in the heavens. 2. Singular of Cirri, *q.v.*

Cissoid, (sis'soid). [Gk. *kissos*, ivy; *eidos*, form.] A mathematical curve, designed for use in the trisection of an angle and the construction of geometrical means between two given lines.

Cistaceæ, (sis-tā'se-ē). [Cistus, *q.v.*]=Rock roses: herbs and shrubs belonging to Cistales.

Cistales, (sis-tā'lēz). [Cistaceæ, *q.v.*] Plants with monodichlamydeous flowers, and parietal or sutural placentæ, forming a sub-division of Hypogynous Exogens.

Cistern barometer. A straight tube of glass, longer than 30 inches, closed at the upper end, with the lower open end immersed in a small cistern of mercury. *v.* Barometric.

Cistus, (sis'tus) [Gk. *kiste*, small box.]= Rock rose=Helianthemum, *q.v.*: named from the shape of the capsules.

Citramide, (sit'ra-mīd). [*Citryl* and *amide*, *q.v.*] = $C_6H_{11}N_3O_4$=Ammonia in which one equivalent of hydrogen is replaced by one of the radicle of citric acid.

Citrates, (sit'rātz). [Citric acid, *q.v.*] Combinations of citric acid with bases.

Citrene, (sit'rēn). [Citrus, *q.v.*] = $C_{10}H_{16}$: a hydrocarbon obtained from oil of lemon.

Citric acid, (sit'rik). [Citrus, *q.v.*] = $C_6H_8O_7$: H_2O: a powerful crystalline acid, found in the fruit of the Citrus medica, &c.

Citrine, (sit'rin). [Citrus, *q. v.*] 1. A colour compounded of orange and green. 2.=False topaz: a yellow variety of native silica.

Citron, (sit'ron). [Citrus.]=Citrus medica. *C. worts*=Aurantiaceæ.

Citrus, (sit'rus). [The Latin name.] Orange, citron, lime, &c., the typical genus of Aurantiaceæ. *C. aurantium*=Orange. *C. medica*=Citron.

Citryl, (sit'ril). [Citrus, *q.v.*] The radicle of citric acid.

Civet, (siv'et). [*Civette*, the French name.] 1.=Viverra civetta =Civet cat: small carnivorous animal. 2. An odorous secretion of the Viverra.


Civet.

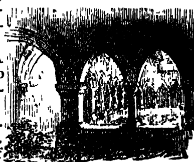
Civil time. The division of the day into 24 hours, or two periods of 12 hours each.

Cladocera, (kla-dos'e-ra). [Gk. *klados*, branch; *keras*, horn.] One of Hoeven's sub-divisions of Crustaceans: minute animals, chiefly fresh water, belonging to Branchiopoda.

Cladocora (kla-dok'o-ra). [Gk. *klados*, branch;

korys, helmet.] A coral polyp with many slender branches.
Claque-bois, (klak'bwaw). [Fr. *claque*, smack; *bois*, wood.] A series of small wooden bars, of regular gradation in size, strung so as to form a kind of harmonicon, the tones of which are produced by a small hammer.
Clary, (kla'ri)=Salvia verbenaco: a plant belonging to Lamiaceæ.
Class, (klas). [*Classis*, the Latin word.] A secondary division of animals or plants. Mammalia, Fishes, &c., in the animal kingdom, Dicotyledons, Acotyledons in the vegetable. *v.* Tables.
Clavellinidæ, (kla-vel-lin'i-dē)=Social Ascidians. *v.* Tunicata.
Clavicle, (klav'i-kl). [L. *clavicula*, little key.]=Collar bone, a long cylindrical bone connecting the blade and breast bones in vertebrated animals = Merrythought, in birds.
Clavius. A walled plain in the moon more than 100 miles in diameter.
Clay, (klā). [*Claeg*, the A.-S. word.]=Hydrated aluminic silicate=$Al_2O_3.2SiO_2.2H_2O$: a mixture of ¾ flint and ¼ clay; used also generally for any ductile earth. *Pure C.*=Kaolin=Porcelain clay.
Clayband ironstone. An earthy variety of Chalybite, *q.v.*: one of the most common ores of iron.
Clay-slate=Argillaceous schist: one of the Metamorphic rocks.
Cleavage planes in crystals. The planes in which the crystals are easily split, usually parallel with one of the faces.
Cleavers, (klē'verz)=Galium aparine: a plant belonging to Galiaceæ.
Clematis, (klem'a-tis). [*Klematis*, the Greek name.]=Traveller's joy: a small shrub belonging to Ranunculaceæ.
Clepsydræ, (klep-si'drē). [*Klepsydra*, the Greek name.] Instruments for measuring time, in use with the ancients. One form resembled an hour glass with water instead of sand.
Climatology, (klī-mat-ol'o-ji). [Gk. *klima*, zone; *logos*, discourse.] The science of the laws governing the changes and conditions of climate.
Climbing palms=Desmoncus.
Climbing plants. Belong to no particular order, but species of any order adapt the habit of climbing from circumstances.
Clinch-work, (klinsh). In boat-building, with the strakes overlapping and riveted together.
Clinkstone, (klink'stōn)=Phonolite: a variety of trachytic rock, named from its being especially sonorous when struck.
Clinometer, (kli-nom'o-ter). [Gk. *klino*, I bend; *metron*, measure.] An instrument for measuring the inclination of strata.
Clipper, (klip-per). A vessel especially designed for swift sailing.
Cloaca, (klo-ā'ka). [L. *cloaca*, sink.] The common cavity in which, into some animals, the reproductive, urinary, and digestive apparatuses open.

Cloister, (klois'ter). [L. *claustrum*, shut in.] A covered arcade, usually in a monastery or other religious building.



Cloister.

Clotho, (klo'tho). A snake belonging to Viperina. *C. arietans*=Puff-adder.
Clouds, (klowdz). [*Clud*, the A.-S. name.] Vapour of water floating in the air and sufficiently dense to be visible. The varieties of clouds are Cirrus, Cirro-cumulus, Cumulus, Cumulo-stratus, and Stratus, *q.v.*
Cloudy stars=Nebulæ: which were considered to be stars until the improvements in telescopes showed their nature.
Cloudberry=Rubus chamæmorus: a plant belonging to Rosaceæ.
Clover, (klō'ver). [*Clæfer*, the A.-S. name.]=Trefolium: a plant belonging to Fabaceæ.
Cloves, (klōvz). [L. *clavus*, nail.]=Dried buds of Caryophyllus aromaticus.
Clove-oil=$C_{10}H_{12}O_2$: a colourless oily liquid obtained from the seeds of cloves, &c.
Clove-worts, (klōv'wurtz). [Clove and worts, *q.v.*]=Caryophyllaceæ, *q.v.*
Club moss, (klub'mos). [Named from shape.]=Lycopodium: a moss-like plant belonging to Lycopodiaceæ.
Club-mosses=Lycopodiaceæ, *q.v.*
Clupea, (klū'pe-a).=Herring: a fish, the type of Clupeidæ.
Clupeidæ, (klū'pi-dē). [Clupea, *q.v.*]=Herrings: fishes belonging to Abdominales.
Clusia, (klū'si-a). [*Clusius*, a botanist.]=Balsam-tree: the typical genus of Clusiaceæ.
Clusiaceæ, (klū-si-ā'se-ē). [Clusia, *q.v.*]=Guttifers: resinous tropical trees and shrubs, with leathery leaves, belonging to Guttiferales.
Clusters of stars. Pleiades, Hyades, Crab-cluster, Præsepe, Dumb-bell cluster, &c., *q.v.*
Cnidæ, (knī'dē). [Gk. *knide*, nettle.]=Nematocysts: the thread cells by which Coelenterata have the power of stinging.
Coal, (kōl). [A.-S. *col*, burning.] An amorphous inflammable mineral substance, composed of modified vegetable matter, found in extensive beds of rock, probably formed in shallow enclosed seas, fringed by swampy forests. *C. brass:* a carbonaceous spathic ore, sometimes found with coal; iron pyrites found in coal. *C. tar:* a pitchy substance, of very compound nature, obtained from coal. *C. gas*=Carburetted hydrogen: an inflammable gas obtained from coal. *C. measures:* a sub-division of the Carboniferous formation, consisting of thick beds of sandstone, with beds of coal resting on clay. *C. fish*=Gadus carbonarius. *C. plants:* known only by fossil remains, chiefly fern-like, of large size, and probably older than the sun. *C. tar colours:* magenta, alizarine, mauve, &c., *q.v.*
Coalescence, (kō-a-les'ens). [L. *coalesco*, I grow with.] Growing together.

Coamings, (kō'mingz). The raised edges of the hatches on the deck of a vessel.

Coast-finds. Semi-fossil or pre-historic remains found on coasts, coeval with kjokkenmoddings. *v.* Kitchen-middens.

Coati, (ko'a-ti)=Viverra nasua: a small bear-like carnivorous animal; also called Coatimondi.

Cobalt, (kō'bawlt.) [*Kobalt*, the German name.] Co^iv· an iron-like metal, reddish, hard, magnetic, and infusible. Its salts are often beautifully coloured, and used as pigments. *C. bloom*=Erythrite, an ore of cobalt. *C. blue*=Thenard's blue, *q.v.* *C. glance*=Cobaltine=Cobaltite, *q.v.* *C. green*=Rinmann's green, *q.v.* *C. group of minerals* includes smaltite, cobaltite, and erythrite; mostly hard and heavy, and colour blowpipe flame blue.

Cobaltite, (kō-bawlt'īt) [Cobalt, *q.v.*]=Cobaltine: a mineral of the cobalt group, crystallising in cubes, chiefly sulphide and arsenide of cobalt.

Cobra, (kob'ra). [Port., serpent.] A name commonly given to hooded serpents. *C. de Capello*=Hooded snake = Coluber Naia.



Cobra-de-capello.

Cocci, (kok'si). [Gk. *kokkos*, scarlet berry.] = Cochineal insects: Mexican insects from which a crimson dye-stuff is obtained.

Coccidæ, (kok'si-dē). [Gk. *kokkos*, scarlet berry.]=Scale insects: a family of insects, which includes the cochineal, belonging to Hemiptera.

Coccinella, (kok-si-nel'la)=Lady-bird: a small beetle belonging to Coleoptera.

Coccoliths, (kok'o-liths). [Gk. *kokkos*, berry, *lithos*, stone.] Small calcareous bodies found in the sheets of Bathybius at the bottom of the sea, supposed to be joints of an alga, which fall from the surface; also found fossil in chalk rocks.

Coccospheres, (kok'o-sfērz). [Gk. *kokkos*, berry; *sphaira*, ball.] Minute bodies found living at bottom of N. Atlantic, and fossil in chalk, often with coccoliths on their surfaces.

Coccosteus, (kok-kos'te-us). An extinct ganoid fish.

Cocculus, (kok'u-lus). [L. *coccum*, berry.] The seeds of Anamirta cocculus, a plant belonging to Menispermaceæ.

Coccygeal region, (kok-sij'e-al). [Coccyx, *q.v.*] The posterior portion of the body.

Coccyx, (kok'siks). [Gk. *kokkux*, cuckoo.] The posterior termination of the vertebral column; shaped somewhat like the cuckoo's beak.

Cochineal insect, (koch'i-nēl). [*Cochinilla*, the Spanish name.]=Coccus cacti: an insect belonging to Hemiptera. *v.* Cocci.

Cochlea, (kok'le-a). [Gk. *kochlias*, spiral shell.] The snail-shaped part of the ear in the higher vertebrata, which discriminates the quality of the sounds heard.

Cochlearia, (kok-le-ā'ri-a). [L. *cochlear*, spoon.] =Scurvy grass: an herb belonging to Brassicaceæ.

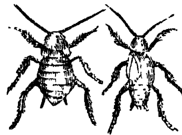
Cocinylene, (ko-sin'i-lēn)=$C_{13}H_{26}$: a hydrocarbon of the olefine series, obtained from bitumen.

Cockatoo, (kok'a-too). [*Kakatua*, the Malayan name.]=Plyctolophus: a parrot-like bird, having a tuft of feathers on the head.

Cockchafer, (kok'chā-fer)=Melolontha vulgaris: an insect belonging to Coleoptera.

Cockle, (kok'le). [*Kochlos*, the Greek name.] =Cardium: a molluscous animal, belonging to Lamellibranchiata.

Cockroach, (kok'rōch)=Blatta: an insect belonging to Orthoptera, commonly called blackbeetle.



Cockroaches.

Cockscomb, (koks'-kom)=Celosia cristata: a plant belonging to Amarantaceæ.

Cocoa, (kō'kō) [Corruption of Cacoa.] =Cacoa: seeds of Theobroma cacoa.

Cocoa-nut tree, (kō'kō). [Port. *coco*, monkey.] = Cocos, a palm tree, 50 to 100 ft. high, named from the monkey-like face roughly imitated by the nut. *C. plum*=Fruit of Chrysobalanus icaco. *C. oil*, white, solid, fatty substance, of complex character.



Cocoa-nut tree.

Cocoon, (ko-koon') [F. *cocon*, shell.] The outer silky covering of the chrysalis of an insect.

Cod, (kod). [Corruption of *Gadus*.] = Gadus morhua =Morrhua vulgaris, a fish.

Codeia, (kō'di-a) [Gk. *kodeia*, poppy head.]= $C_{18}H_{21}NO_3,H_2O$: one of the natural alkaline bases found in opium, a crystalline nitrile base.

Codeine, (kō'de-in) [Gk. *kody*, poppy-head.] =C=$C_{18}H_{21}NO_3$: an alkaloid base, found in opium.

Co-efficient, (kō-ef-fish'i-ent). [L. *co*, with; and *efficient*.] In mathematics=Factor or multiplier.

Cœlelmintha, (sē-lel-min'tha). [Gk. *koilos*, hollow; *helmins*, worm.] A primary division of Entozoa, as arranged by Rudolphi.

Cœlenterata, (sē-len-ter-ā'ta) [Gk. *koilos*, hollow, *entera*, bowels.] Corals, coralline, &c.: animals having a hollow digestive cavity, in two layers, ectoderm and endoderm, an alimentary canal, and thread cells or nematocysts; all marine but two genera; divided into Hydrozoa and Actinozoa.

Cœliac, (sē li-ak) [*Koiliakos*, the Greek word.] Belonging to the intestines.

Cœnenchyma, (sē-nen-kī'ma). [Gk. *koinos*, common; *chyma*, secretion.] In some Madreporaria: the common mass of the corallum between the polyp cells; a secretion uniting the corallites of compound corals.

Cœnopithecus, (sē-no-pi-thē'kus). [Gk. *koinos*, social, *pithekos*, ape.] An ape-like animal, found fossil in Middle Eocene beds, the oldest known quadrumanous animal.

Cœnosarc, (sō'no-sark). [Gk. *koinos*, common; *sarx*, flesh.] The common stem by which the separate individuals of compound Hydrozoa are united.

Cœnurus, (sē-nū'rus). [Gk. *koinos*, common, *oura*, tail.] A hydatid, found in sheep; a nurse form of a tape-worm.

Coerulein, (sē'ru-lin). [L. *cœrulus*, deep blue.] $=C_{18}H_{10}O_6$. a blue dye-stuff, obtained from gallein.

Coffea, (kof'fe-a). [Corruption of the Arabic name, *Qahwah*.] A plant belonging to Rubiaceæ. *C. Arabica*, the only cultivated species.

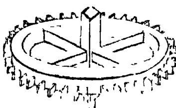
Coffee=(kof'fe). [*Coffea*, q.v.]=The ground seeds of Coffea Arabica.

Coffer-dam, (kof'fer dam). An inclosure of wood, earth, or both, made in deep water, to enable the inclosed space to be kept dry, used in building foundations for piers, &c.


Coffee-plant

Coffin bone. Distal phalanx of the foot, in the horse.

Cog, (kog). [The Welsh name.] A small projection in machinery, used to impart motion. *C. wheel*, a wheel having cogs on its circumference.


Cog-wheel

Coggia's Comet = III. 1874: the third comet observed in the year 1874.

Coir, (koir). The rough fibrous covering of the cocoa nut, used for matting, ropes, &c.

Coke, (kōk). [*Koke*, the German name.] Carbon, with a small admixture of minerals, obtained from coal by the removal, by heat, of the more volatile constituents.

Cohesion, (ko-hē'zhun). [L. *cohæreo*, I cling to.] The form of molecular attraction which keeps two molecules of any body together; strong in solids, weak in liquids.

Colatitude. The distance of a place from the nearest pole=90°−latitude.

Colchicum, (kol'chi-kum). [Classical.]=Meadow saffron: a plant belonging to Liliaceæ.

Cold, (kōld). [*Ceald*, the A.-S. name.] The absence of heat; absolute cold is the absolute absence of the molecular motion called heat =Absolute rest.

Coleoptera, (kol-e-op'ter-a). [Gk. *koleos*, sheath; *pteron*, wing.]=Beetles, &c.: a primary division of insects, in which the front wings are hardened and cover the hinder ones.

Collapsing, (kol-laps'ing). [L. *collabor*, I fall down.] Term used when a steam boiler is broken, through the pressure of steam, &c., within being less than the external pressure of air.

Collar, (kol'lar). [L. *collum*, neck.] *C. beam*: a variety of the tie beam. *C. bone*=Clavicle, *q. v.*

Collas. An American race.

Collemaceæ, (kol-le-mā'se-ē). A sub-division of Lichens.

Collidine, (kol'li-dīn)$=C_8H_{11}N$: a base of the Pyridine series; an alkaloid obtained from shale and from bones.

Colligate, (kol'li-gāt). [L. *colligare*, to bind together.] An associated organic compound.

Collimator, (kol-lim-ā'tor). [L. *con*, with; *limes*, limit.] Fine threads crossing the aperture of a telescope, &c., to mark its exact centre.

Collimation, (kol-li-mā'shun). [L. *con*, with; *limes*, limit.] The exact determination of the position of a star, &c., by means of fine lines across the object-glass of a telescope.

Collodion, (kol-lō'di-on). [Gk. *kolla*, glue.] A solution of gun-cotton in ether and alcohol, forming a transparent, sensitive, membraneous substance, much used in photography.

Colloids, (kol'loidz). [Gk. *kolla*, glue; *eidos*, form.] A general name for substances which resemble glue in character, unite readily with crystalloids, do not crystallise.

Colon, (ko'lon). [Gk. *kola*, pl. of *kolon*, intestines.] The large intestine, which first ascends from the junction of the small intestines, and then descends to the rectum.

Colonnade, (kol-on-ād'). [F. *colonne*, column.] A series of columns supporting a roof.

Colophene, (kol'o-fēn). [Colophony, *q.v.*] A modified form of oil of turpentine.

Colophonite, (kol'o-fo-nīt). [Colophony, *q.v.*] A dark-coloured variety of garnet, named from its colour.

Colophony, (kol'o-fo-ni). [Kolophon, a town in Asia Minor.]=Common resin, obtained from turpentine.

Colour, (kul'or). [*Color*, the Latin word.] *Adjective C.*: a dye-stuff that requires the use of a mordant. *Substantive C.*: a dye-stuff with which no mordant is required. *Simple C.*: one that cannot be decomposed. *Complementary C.*: the one needed to produce white when mixed with a given colour. Ex., Green and red; orange and blue; yellow and indigo, are complementary to each other. *C. disease* =Achromatopsy, *q. v.* *C. of a note*=Timbre, *q. v.* *C. of animals*: no white wild bird or mammal in Europe, except Arctic; tropical birds chiefly green; birds building closed nests are usually gaily coloured in both sexes.

Coluber, (kol'u-ber). [The Latin name.]= Adder: a snake belonging to Colubrina.

Colubridæ=Colubrina: a primary division of Ophidia or snakes, including boas, pythons, and vipers.

Columba Noachi. Noah's dove: one of the southern constellations, of small extent.

Columbacei, (kol-um-bā'se-i). [L. *columba*, dove.]=Columbæ=Columbidæ: doves and pigeons: birds belonging to Rasores.

Columbidæ, (kol-um'bi-dē). [L. *columba*,

dove.] 1 =Pigeons: birds belonging to Rasores. 2.=Columbacei.

Columbine, (kol'um-bīn)=Aquilegia, *q.v.*

Columbium, (kol-um'bi-um) [Columbia, America.]=Nb, also called Niobium, *q.v.*: a rare mineral, found in columbite.

Colymbidæ, (kol-im'bi-de). [Gk. *kolymbis*, a diving bird.]=Divers: aquatic birds belonging to Natatores.

Columella, (kol-u-mel'la). A bone in the ear of a bird, corresponding to the auditory ossicles of the human ear.

Columelliaceæ, (kol-u-mel-i-ā'se-ē). [Senor Columella.]=Columelliads: evergreen shrubs and trees, found only in Mexico and Peru, belonging to Cinchonales.

Colza oil, (kol'za). [The French name.] From seeds of Brassica oleifera.

Coma Berenicis, (kō'ma be-re-nī'sis). [Gk. *kome*, hair, and Berenice.] A small constellation in the northern heavens, near Arcturus.

Comanche. An American race.

Combination, (kom-bi-nā'shun). [L. *con*, with, *bini*, two by two.] The changes in the grouping of a number of things.

Combinational tone. A third tone produced when two musical notes are sounded together; also called the *grave harmonic* and *differential tone*.

Combretaceæ, (kom-bre-tā'se-ē). [Combretum, the typical genus.]=Myrobalans: shrubs and trees, found in tropics only, belonging to Myrtales.

Combustion, (com-bust'yun). [L. *comburo*, I burn.] = Chemical combination: chemical action so rapid as to produce the sensation of heat and sometimes light.

Comet, (kom'et). [*Cometa*, the Latin name.] A luminous body, consisting of (1) a nucleus, or luminous centre, (2) a coma or head, (3) an envelope or atmosphere, and (4) a tail, moving in a very large parabolic orbit, only a portion of which is within our view. There are several comets, mostly telescopic, observed every year, and about 4000 have been seen since the Christian era.

Comets of short period.

Encke, ...	3¼ years.	All telescopic.
Di Vico, ...	5½ ,,	
Winnecke, ..	5½ ,,	
Brorsen, ...	5½ ,,	
Biela, ...	6¾ ,,	
D'Arrest, ...	6¾ ,,	
Faye, ...	7½ ,,	
Mechain, ...	13½ ,,	

Comets of long period.

Westphal, ...	67¾ years.
Pons, ...	70½ ,,
Di Vico, ...	73¼ ,,
Olbers, ...	74 ,,
Brorsen, ...	75¾ ,,
Halley, ...	76¼ ,,
Donati, about	2000 ,,

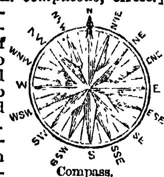
The figures above are the periods of return.

Commelynaceæ, (kom-me-lī-nā'se-ē). [Commelin, J. & G.]=Spider-worts: lily-like herbs belonging to Xyridales.

Commensalism, (kom-men'sa-lizm). Used by Van Beneden for a union of a non-parasitic kind between two animals, as when an actinia fixes itself on the back of a crab.

Commutator, (kom-mu-tā'tor). [L. *commutare*, to change.]=Break: an instrument for making, breaking, or changing the direction of a galvanic current easily and rapidly.

Compass, (kum'pas). [L. *compassus*, circle.] *Declination C.*: a magnetised needle supported at its centre of gravity, and free to move in any horizontal direction; it points to the magnetic N. and S. poles of the earth. *Mariner's C.*: a declination compass used on board ships. *Inclination C.*: a magnetic needle free to move vertically so as to point to the magnetic pole. *Sine C.*: a galvanometer by which the strength of a current is measured by the sine of the angle through which the needle moves.



Compass.

Compensation, (kom-pen-sā'shun). [L. *compensatio*, balancing.] *C. balance* in chronometers resembles the C. pendulum in object and method. *C. pendulum*: one in which the distance between the centre of the bob and the point of suspension is kept unaltered, the expansion or contraction of the rod, owing to heat or cold, being compensated by some artifice.

Complemental. *C. air:* about 100 cubic inches, for which there is space in the chest, and which may be inspired by a special effort. *C. males:* short-lived additional males, complemental to hermaphrodite animals, found in Lepadidæ.

Complementary colours. The colour given by a mixture of the colours of any portion of a spectrum is the complement of the remaining portion. Ex., Orange is complementary to blue; green to red.

Compositæ, (kom-pos'i-tē). [L. *compositus*, compound.]=Asteraceæ, *q.v.*

Compound. *C. ratio:* the ratio of the products of two sets of homologous terms. *C. eye:* in insects and crustaceæ. *C. flowers:* heads of small flowers with an involucre. *C. acids*= Colligated acids, *q.v.* *C. microscope:* having two or more glasses or lenses.

Compsognathus, (komp-sog'nath-us). [Gk. *kompsos*, elegant; *gnathos*, jaw.] A reptile belonging to Deinosauria, approximating to a bird by hopping erect, and so connecting the two classes.

Concave, (kon-kāv). [L. *concavus*, hollow.] Hollow.

Concha, (kong'ka). [L. *concha*, shell.] The external portion of the ear.


Concave.

Conchifera, (kong-kif'er-a). [L. *concha*, shell; *fero*, I carry.] A term for mollusca, such as the oyster and mussel, which have shells.

Conchoidal, (kong-koi'dal). [Gk. *kogche*, shell; *eidos*, form.]=Shell-like.

Conchology, (kong-kol'o-ji). [Gk. *kogche*, shell; *logos*, discourse.] The science of the structure and classification of shell-bearing animals.

Concrete, (kon'krēt). [L. *concretus*, stiffened.] A mixture of gravel, pebbles, or broken stones with cement.

Concrete science. That which treats of phenomena known to us in their totalities, as in Astronomy, Geology, Biology, &c., by the redistribution of matter and motion.

Condenser, (kon-den'ser). [L. *condenso*, I thicken.] 1. An apparatus for collecting or condensing electricity. 2. An apparatus for condensing vapours into liquids.

Condor, (kon'dor). [From *cuntur*, the Peruvian name.]=Sarcoramphus gryphus: a large vulture, found on lofty mountains in S. America.


Condor.

Conduction, (kon-duk'shun). [L. *conduco*, I bring together.] The passage of heat, electricity, &c., through matter by its transfer from particle to particle.

Conductors of heat and electricity. Metals, charcoal, water, animal and vegetable substance, &c., metals being by far the best.

Condyle, (kon'dil). [Gk. *kondylos*, knuckle.] The articulating surface of a bone, used specially of the bony projection by which the skull is attached to the vertebral column.

Condy's fluid. A solution of manganate of sodium which disinfects by the oxidation of putrid matter.

Cone, (kōn). [*Conus*, the Latin name.] 1. A regularly tapering figure having a circular base and a pointed summit. 2. A general term for such fruits as those of the pine tree, which have somewhat conical forms.

Confervaceæ, (kon-fer-vā'se-ē). [L. *conferveo*, I unite with.]=Confervas: aquatic threads or membranes, reproduced by internal spores, belonging to Algales; algæ bearing the lichens Cœnogonium and Cystocoleus.

Congelation, (kon-je-lā'shun). [L. *congelo*, I freeze.] The conversion of a liquid into a solid by freezing.

Conger, (kong'ger). [The Latin name.]= Muræna conger=Anguilla conger: a large marine eel from 5 to 10 feet long.

Congestion, (kon-jest'yun). [L. *congestio*, a heaping together.] An undue distension of the blood-vessels, &c., causing accumulation of blood.

Conglomerate, (kon-glom'er-āt). [L. *conglomero*, I entangle.]=Pudding-stone=Pebbly sandstone: gravel cemented into solid rock =Agglomerate, of which the fragments have been rounded by action of water.

Congo=Mycetes palliatus, *q.v.* *C. snake*= Amphiuma, *q.v.*

Congos. An African people.

Conia, (kō'ni-a). [Conium, *q.v.*]=Conylia= $C_8H_{15}N$=Coniine: a natural base found in the hemlock, a transparent oily liquid= Imide of conyl: one of the secondary monamines.

Conic, (kon'ik). [Cone, *q.v.*] *C. sections:* the circle, the ellipse, the hyperbola, and the parabola: curves formed by the intersection of a plane and a cone. *C. nodes:* a mathematical term occurring in calculations respecting cubic surfaces, represented by a common apex of two cones.

Conidia, (kon-id'i-a). [Gk. *konis*, dust.] The propagating buds of mildew, in the form of minute spores.

Coniferæ, (kō-nif'e-rē). [Cone, *q.v.*; L. *fero*, I bear.]=Pinaceæ: trees, such as the pine and fir, with resinous timber and conical-shaped fruit, forming a division of Gymnospermous Exogens, common in temperate and cold countries; none in tropical America.

Coniine, (kō'ni-in). [Conium, *q.v.*]=Conia, *q.v.*=$C_8H_{15}N$: a base found in hemlock.

Coniomycetes, (kon-i-o-mi-sē'tēz). [Gk. *konis*, dust; *mykes*, mushroom.]=Blights: a primary division of Fungales; minute parasitic plants.

Conirostres, (kō-ni-rost'rēz). [Cone, *q.v.*; *rostrum*, snout.] A division of Insessores, marked by a strong conical beak.

Conium, (kō'ni-um). [*Koneion*, the Greek name.]=Hemlock: a plant belonging to Apiaceæ.

Conjugate, (kon'jōō-gāt). [L. *conjugo*, I connect.] *C. axes:* in analytical geometry, two axes that are so related as to be interchangeable. *C. mirrors:* two mirrors placed face to face, so that each reflects rays of light or heat to the other. *C. compounds:* chemical compounds in which the union is so intimate that the constituents are not always to be detected by the ordinary tests; also called copulated compounds.

Conjugation, (kon-jōō-gā'shun). [L. *conjugatio*, mixture.] A modified form of sexual union observable in plants and in Infusoria.

Conjunction, (kon-jungk'shun). [*Conjunctio*, the Latin word.] When three heavenly bodies are in a straight line they are said to be in conjunction. *Superior conjunction* is when an inferior planet is in a line with the earth and the sun, the sun being between the others. *Inferior conjunction* is when the inferior planet is in a line with the earth and sun, and also between them. A superior planet is in conjunction when it is in the same line as the earth with the sun between them.

Conjunctiva, (kon-jungk-tī'va). A membrane lining the eyelids and covering the eyeball.

Connaraceæ, (kon-na-rā'se-ē). [*Konnaros*, the Greek name.]=Connarads: trees and shrubs, chiefly American, with compound leaves, belonging to Rutales.

Connective tissue. A filamentous gelatinous substance forming the chief portion of the dermis; also called fibrous tissue, areolar tissue, and cellular tissue.

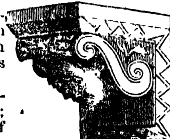
Conodonts, (kon'o-donts). [Conoid, *q.v.*; Gk. *odous*, tooth.] Lower Silurian fossils: small

conical bodies, probably the spines of molluscs or the horny teeth of fishes.

Conoid, (kon'oid). [Cone, *q.v.*; Gk. *eidos*, form.] A solid having an approximation to the form of a cone, especially the figure made by the revolution of one of the conic sections round its axis.


Conoid.

Console, (kon'sōl). [L. *consolidus*, firm.] A bracket, usually formed by a projection from the wall.


Console.

Constant batteries. Galvanic batteries which remain in uniform action for several hours or days.

Constellations, (kon-stel-lā'shunz). [L. *con*, with; *stella*, star.] Groups of stars mostly with classical names. *Ancient C.:* 48 formed by Ptolemy in 150 A.D., with 2 others added by Tycho Brahe. *Modern C.:* 59 others since formed, many by Helvetius at the end of the 17th century.

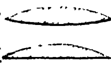
Contact action=Catalysis, *q.v.*

Convallaria, (kon-val-lā'ri-a). [L. *convallis*, a valley.] Lily of the valley: a plant belonging to Liliaceæ.


Convallaria.

Convection, (kon-vek'shun). [L. *conveho*, I carry.] The passage of heat, electricity, &c., by its being carried from place to place by particles of matter affected by it.

Convex (kon'veks). [L. *convexus*, arched.] Rounded.


Convex

Convolvulaceæ, (kon-vol-vu-lā'se-ē). [Convolvulus, *q.v.*] =Bindweeds: herbs and shrubs, chiefly tropical, belonging to Solonales.

Convolvulus, (kon-vol'vu-lus). [L. *convolvere*, to entwine.]= Bindweed: a twining herb, with milky juice, the type of Convolvulaceæ.


Convolvulus

Cony, (kō'ni). [L. *cuniculus*, little rabbit.] A variety of the rabbit.

Conyl=C_8H_{14}: an hypothetical hydrocarbon contained in Conylia.

Conylia=Conia, *q.v.*

Co-ordinates, (kō-ord'i-nāts). [L. *con*, with; *ordinatus*, arranged.] Lines and angles, used in mathematics to fix the position of a point or series of points.

Coot, (koot). [Welsh *cwt*, short tail.]= Fulica: an aquatic bird, belonging to Grallatores.


Coot.

Copaiba, (kō-pā'ba). [The Spanish name.] A resin obtained from Copaifera, a S. American tree.

Copal, (kō'pal). [*Copalli*, the Mexican name.] A resin obtained from the tree Hymenæa and others, used as a varnish.

Copalite, (kō'pa-lit). [Copal, *q.v.*] An inflammable mineral.

Copepoda, (ko-pē'po-da). [Gk. *kope*, oar; *pous*, foot.] Minute crustaceans, both marine and fresh-water, some locomotive, some fixed parasites, called Oar-footed Crustaceans.

Copernican system, (ko-per'ni-kan)=Solar system, *q.v.*

Copernicus, (ko-per'ni-kus). A crater in the moon, about 46 miles in diameter, surrounded by mountains about 2 miles high, named after the astronomer Copernicus.

Copper, (kop'per). [Cyprus.]=Cuprum=Cu": a red, hard, ductile, tenacious, malleable metal: of great and varied use; originally called brass of Cyprus. Also named after Venus, and expressed by ♀. *C. sand*=Atacamite, *q.v.* *C. group of minerals:* mostly soft, and give blue solutions and blowpipe flame; includes copper, cuprite, melaconite, malachite, chessylite, chrysocolla, chalcocite, erubescite, chalcopyrite, olivenite, &c. *Black C. ore*=Melaconite, *q.v.* *Grey C. ore*= Chalcocite, *q.v.* *Yellow C. ore*=Chalcopyrite, *q.v.* *C. glance:* a variety of Chalcocite, *q.v.* *C. pyrites:* a variety of Chalcopyrite, *q.v.*; the common ore of copper.

Copperas, (kop'per-as). [*Couperose*, the French name.]=Green vitriol: sulphate of iron.

Coprolites, (kop'ro-lits). [Gk. *kopros*, dung; *lithos*, stone.] 1. Fossil excrement of animals, at first mistaken for fir cones. 2. Pebbles of calcic phosphate and carbonate; formerly supposed to be fossilised dung, found in Chloritic or Upper Greensand beds.

Copulated acids, (kop-u-lāt'ed)=Conjugated acids; in which the base and acid are more intimately mixed than in ordinary salts.

Cor, (kor). [The Latin name.] The heart; sometimes applied to the chief star of a constellation. *C. Caroli:* a bright star in Canes Venatici; named in honour of Charles II. at the Restoration, when it was observed to shine more brightly than usual. *C. Hydræ* = α Hydræ. *C. Leonis* = α Leonis. *C. Serpentis* = α Serpentis: also called Unukalkay.

Coracoid, (kor-a-koid'). [Gk. *korax*, crow; *eidos*, form.] A bone forming part of the scapular arch; in man it has the form of a crow's beak.

Coral, (kor'al). [*Corallum*, the Latin name.] Stony matter secreted by polyps, hydrozoa, bryozoans, &c.; nearly pure carbonate of lime; harder than common limestone. *Red C.*=Corallum rubrum. *C. island*= Coral reefs, isolated in deep oceans. *C. polyp* =Anthozoa. *C. rag*=Coralline limestone. *C. reefs*, of coral rock, built on sea-bottom,


Coral.

wholly submerged at high tide, usually in seas having a mean temperature between 68° and 85° F. *C. root*=Corallorhiza=Dentaria. *C. snake*=Elaps, of Brazil, brilliantly coloured.

Corallaria, (kor-al-lā'ri-a). [Coral, *q.v.*] Term used by Milne Edwards for coral polyps.

Corallet, (kor'al-let). [Coral, *q.v.*] The coral of a single polyp in a compound mass.

Coralligena, (kor-al-li-jē'na). [Gk. *korallion*, coral, *gennao*, I produce.] A primary division of Actinozoa, including all the coral-forming genera.

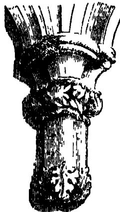
Coralline zone of life, (kor-al-līn') [Coral, *q v*] Below Laminarian to a depth of 50 fathoms: chiefly marked by millepore and plant-like bryozoa and zoophytes. Cod, haddock, turbot, sole, &c , abundant. *v.* Zones of life.

Corallum, (kor-al'lum). [Coral, *q.v.*] The coral of a compound or of a single polyp.

Corallorhiza, (kor-al-lor-hi'za). [Coral, *q v* , Gk. *rhiza*, root]=Coral-root: a leafless herb, belonging to Orchidaceæ.

Corbeil, (kor'bēl). [F. *corbeille*, basket] A sculptured representation of a basket.

Corbel, (kor'bel). [F. *corbeille*, basket.] A projection of iron or masonry from a wall intended as a support.


Corbel

Cord-moss = Funaria hygrometrica.

Cordelier, (kor'de-lēr). A machine for rope-making, invented by Mr. Cartwright

Cordiaceæ, (kor-di-ā'se-ē). [M. Cordus.]=Sebestens: trees, chiefly tropical, with succulent fruits, belonging to Solanales.

Cardleafs=Restiaceæ.

Coriander, (kor-i-an'der). [*Coriandrum*, the Latin name.] A plant belonging to Apiaceæ.

Coridine, (kor-i-dīn')=$C_{10}H_{15}N$: a base of the Pyridine series.

Corinthian, (kor-in'thi-an). [Corinth.] One of the orders of Grecian architecture, remarkable for its ornamentation.

Cork, (kork). [*Cortex*, the Latin name.] The soft elastic inner bark of oak trees, especially of Quercus suber, buoyant in water. *C. oak* =Quercus suber. *C.-wing*=Crenilabrus Norwegicus: a bird. *C.-ling*=Turdus minor, a bird.

Cormophyta, (kor-mof'i-ta). Endlicher's term for a primary division of plants. *v.* Endlicher.

Cormopoda, (kor-mop'o-da). [Gk. *kormos*, block; *pous*, foot.] Burmeister's term for Acephala.

Cormorant, (kor'mor-ant). [*Cormoran*, the French name.]=Phalacrocorax: a bird belonging to Natatores; originally called Corvus marinus, or sea-crow.


Cormorant.

Corn, (korn). [The A.-S. name.] A general term for wheat, barley, oats, &c. *C. crake* =Crex pratensis, a bird belonging to Rallidæ *C. marigold*=Chrysanthemum segetum: a plant belonging to Asteraceæ. *C. weevil*=Calandra granaria: an insect which lays its eggs in corn-flowers.

Cornaceæ, (kor-nā'se-ē). [Cornus, typical genus]=Cornels: shrubs and trees belonging to Umbellales.

Cornbrash, (korn'brash). [Good land for corn.] A bed of clay and sandstone, belonging to Lower Oolite.

Cornea, (kor'ne-a). [L. *corneus*, horny] The transparent front portion of the eyeball.

Corns, (kornz). [L. *cornu*, horn.] Horny thickenings of the epidermis caused by friction; common on the feet, hands, &c.

Cornelian, (kor-nē'li-an). [*Cornalina*; the Italian name.] *v.* Carnelian.

Corolla, (ko-rol'la.) [L. *corolla*, small crown.] The inner whorl of leaves, called petals, in a flower, usually thin, and gaily coloured.


Corolla.

Corollary, (kor'ol-la-ri). [*Corollarium*, the Latin word.] An easily deduced consequence of an admitted proposition.

Corollifloræ, (ko-rol-i-flō'rē). [Corolla, *q.v.*, L. *flos*, flower.] Plants in which the petals of the flowers are not attached to the calyx, and both perianths are large and petaloid, a sub-division of Perigynous Dicotyledons.

Coromandel wood=Diospyros, *q.v.*

Corona, (ko-rō'na). [L *corona*, a crown] In total eclipse of sun, the halo which surrounds the moon, supposed to be the sun's atmosphere, which at other times is invisible. *C. australis*=The Southern Crown. *C borealis* =The Northern Crown, a northern constellation, the chief star of which is Alphecca, or Gemma. One of the very small stars suddenly increased in 1866 to the second magnitude, and then decreased again, supposed to have been on fire.

Coronal, (kor'o-nal). [Corona, *q v.*] Related to the crown of the head. *C. suture:* a line of union across the skull.

Coronary, (kor'o-na-ri). [Corona, *q v.*] *C. arteries:* those serving the heart. *C. veins:* those coming from the heart.

Coronoid processes, (kor'o-noid). [Gk. *korone*, knob; *eidos*, form.] Rounded projections of the lower jaw and the ulna.

Corpora, (kor'po-ra). [L. *corpus*, body] *C. Wolffiana*=Wolffian bodies, *q.v.* *C. quadrigemina:* hemispherical elevations in the lower part of the brain; smaller in man than in some other animals. *C. mammillaria:* two rounded bodies at the back of the brain. *C. striata:* two globular bodies in the brain.

Corpus, (kor'pus). [The Latin name.] A small mass. *C. callosum:* a horizontal mass of transverse fibres which unites the hemispheres of the brain, in mammals only. *C. striatum:* a nervous substance, forming the base of the lateral ventricle of the brain.

Corpuscles of blood, (kor-pus'klz). [L. *corpus-*

culum, a little body.] 1. Minute circular discs, of a yellow-red colour, which give to blood its red colour. 2 Similar particles of a white colourless regular form.

Corrodentia, (kor-ro-den'shi-a). [L. *corrodo*, I gnaw; *dens*, tooth.]=Termitinæ: insects of which the white ants are the type; a division of Orthoptera.

Corrosive sublimate, (kor-rō'siv). [L. *corrodo*, I gnaw away.]=$HgCl_2$=Bichloride of mercury: a white, crystalline, poisonous substance.

Corundum, (ko-run'dum). [The Indian name.] =Adamantine spar: a mineral, crystallising in hexagons, composed chiefly of alumina. The ruby and sapphire are varieties of corundum.

Corvette, (kor-vet'). [The French name.] A small ship of war.

Corvidæ, (kor'vi-dē). [Corvus, *q.v.*] Crows: a family of birds, belonging to Conirostres, including the crow, magpie, raven, rook, &c.

Corvus, (kor'vus). [The Latin name] 1.= The crow: a small southern constellation. 2. A large carnivorous bird, the type of Corvidæ. *C. corone:* Carrion crow. *C. corax*= Raven.

Corylaceæ, (ko-ri-lā'se-ē). [Corylus, *q.v.*]= Mast-worts: trees and shrubs, including the beech, chestnut, hazel, oak, &c., belonging to Quernales; have the flowers in catkins, and nuts inclosed in cups.

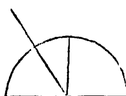
Corylus, (kor'i-lus). [The Latin name.] = Hazel: a shrub or tree, the type of Corylaceæ: fossil remains of C. are found in Lower Miocene strata.

Corymb, (kor'im). [Gk. *korymbus*, a bunch] An inflorescence in small heads, level at the top.

Corynidæ, (kor-in'i-dē) [Gk. *koryne*, a little club.] A sub-division of Hydrozoa, mostly marine.

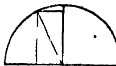
Coryphæna, (ko-ri-fē'na). A fish, belonging to Acanthopterygii.

Cosecant, (cō-sē'kant). [Complement of *secant*, *q.v.*] In a right-angled triangle the cosecant of an angle is the ratio of the hypothenuse to the side opposite the angle.


Cosecant.

Coseismal, (kō-sīs'mal). [Gk. *seismos*, earthquake.] The line in which a wave shell reaches the earth at the same time. *v.* Seismology.

Cosine, (kō'sīn). [Complement of *sine*, *q.v.*] In a right-angled triangle the cosine of any one of the angles is the ratio of the side joining it to the right angle to the hypothenuse.


Cosine.

Costal, (kos'tal). [L. *costa*, rib.] Belonging to the ribs. *C. plates:* developed ribs, in Chelonia.

Cotangent, (kō-tan'jent). [Complement of *tangent*, *q.v.*] In any right-angled triangle the cotangent of any one of the angles is the ratio of the side joining the angle to the right angle to the side opposite the angle.


Cotangent.

Cotton, (kot'n). [*Coton*, the French name.] A vegetable fibre, in very short pieces, growing from the seeds of Gossypium, which are spun into long threads. *C. grass* =Eriophorum. *C. plant*= Gossypium herbaceum, and other species. *C. tree* of India = Bombax pentandrum. *C. wool* acts as a filter to air, separating the solid particles. *C. trees* = Bombaceæ, *q.v.*

Cottus, (kot'tus). [The Latin name.] A fish belonging to Acanthopterygii.

Coturnix, (ko-ter'niks). A bird of the grouse kind, belonging to Tetraonidæ.

Cotyledon, (ko-ti-lē'don). [Gk. *kotyledon*, a cup or small cavity.] 1.=Penny-wort: a plant belonging to Crassulaceæ, named from its cup-shaped leaves. 2.=A seed-leaf, which contains nutriment for the plant in its early stage of growth. 3 =The cup-shaped tufts of the placenta in Ruminantia.

Cotyledonary placenta. In which the fœtal villi are gathered into bunches or cotyledons, as in ruminant animals.

Cougar, (kōō'gär). [Corruption of Brazilian name.] = Cougouar = Puma = American lion=Felis concolor. A carnivorous animal, found in South and Central America.


Cougar.

Coumaric acid, (kōō'-ma-rik). [Coumarin, *q.v.*] $C_9H_8O_3$: obtained from coumarin.

Coumarin, (kōō'ma-rin)=$C_9H_6O_2$: a crystalline substance found in the Tonka bean or Coumarouna odorata.

Counter trade winds. Further N. and S. than the trade winds, *q.v.*, and blowing the reverse way.

Countesses, (kount'es-ez). Slates for roofing, 20 inches by 10 inches.

Couple, (cup'l). [L. *copula*, bond.] 1. Two equal forces acting in opposite directions at two different points of a body, tending to produce rotation. 2. *Optical C.:* a double star, in which the two stars have no mutual relation. 3. *Physical C.:* a double star, in which the two stars are related to each other in some way. 4. *Galvanic C.:* two substances so arranged as to form a galvanic cell, and produce a current. 5. *Thermo-electric C.:* two metals of different conducting powers for heat.

Couxio=Pithecia Satanas: an American monkey with black beard.

Coversed sine. The coversed sine of any angle is the difference between its sine and unity: covers A=1−sin. A.

Cow, (kow). [*Cu*, the A.-S. name.] The female of the ox. *C. bird*=Coccygus Ameri-

canus, an American bird. *C. tree*=Massanduba: a plant of Brazil, from the bark of which a kind of milk is obtained. *C.-bane*=Cicuta. *C.-berry*=Vaccinium. *C. bunting*=Molothrus, *q.v.* *C. plant*=Gymnema lactiferum, *q.v.* *C. parsley*=Chærophyllum temulum. *C.-slip*=Primula veris, *q.v.* *C trees*=Artocopads and fig trees, which have thick, milky juice. *Sea C.* = Trichechus rosmarus, *q.v.*

Cowper's glands. Secreting organs in the urethral tube of mammals.

Cowries, (kow'riz). [*Kauri*, the East Indian name.]=Cypræidæ: molluscous animals belonging to Gasteropoda.

Coyotes, (koi'o-tēz). [Corruption of *Coyott*, the native name.] A wolf of Nicaragua.

Crab, (krab). [*Krabba*, the A.-S. name.] 1. Cancer pagurus: an aquatic animal, belonging to Crustaceæ, which passes through the successive stages of Zoe, Megalopa, and Crab. *Shore C.* = Carcinus mœnas. *C. apple*= Wild apple=Pyrus malus. *C. cluster*=A cluster of stars in the constellation Taurus. *C. lobsters*=Porcellanæ. 2. A small portable capstan.

Cracidæ, (krā'si-dē). [Crax, *q.v.*]=Curassows: a family of Gallinaceous birds in Central and Southern America.

Cradle hills. Small hillocks formed by fallen trunks of trees; an American term.

Crag, (krag). [*Craig*, the Welsh name.] *Antwerp C.*: in Older Pliocene. *White C.*: in Older Pliocene.

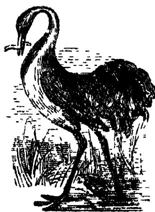
Crag and Tail. A crag or large rock having an accumulation of drift on one side; often found in valleys.

Crambe, (kram'be). [Gk. *krambe*, cabbage.] =Sea kale: an herb belonging to Brassicaceæ.

Cranberry, (kran'ber-ri). [*Crane-berry*, from its slender stalks.]=Oxycoccos. *Tasmanian C.*=Astroloma humifusum.

Cranberries=Vacciniaceæ, *q.v.*

Crane, (krān). [*Cran*, the A.-S. name.] 1. Grus: a large bird with long legs and neck, belonging to Grallatores. *Numidian C.*=Demoiselle. *Crowned C.* = Balearica. 2. A small southern constellation. 3. A machine for raising and lowering heavy articles. *C. flies*=Tipulidæ, *q.v.*


Crane.

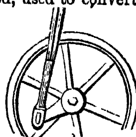
Crane's bills, (krānz bilz) =Geraniaceæ, *q.v.*

Crania, (krā-ni'a). An animal belonging to Brachiopoda, found in all fossilferous strata from the earliest.

Cranial, (krā'ni-al). [Cranium, *q.v.*] Belonging to the cranium. *C. bones*: occipital, parietal, frontal, and nasal bones, forming the cranium. *C. cavity*: contains the brain.

Cranium, (krā'ni-um). [The Latin name.] The bony enclosure of the brain.

Crank, (krangk). A rod, used to convert the circular motion of a wheel into the to and fro motion of a rod, or the reverse.


Crank.

Crassamentum, (kras-sā-men'tum). [The Latin word.] =Clot: a semi-solid body, which forms in blood when it coagulates. The blood corpuscles connected by the fibrin separated from the plasma or fluid of the blood.

Crassulaceæ, (kras-su-lā'se-ē). [L. *crassus*, thick.]=House-leeks: shrubs and herbs with succulent stems and leaves, belonging to Violales.

Craspeda, (kras'pe-da). [Gk. *kraspedon*, border.] Long cords, charged with thread cells, bordering the margin of many sea-anemones.

Craspedote Medusæ, (kras'pe-dōt). [Gk. *kraspedon*, border.]=Naked-eyed Medusæ, *q v.*

Cratægus, (krat-ē'gus). [Gk. *kratos*, strength.] =Hawthorn: a shrub or tree, belonging to Pomaceæ, named from the strength of its timber.

Crater, (krā'ter). [The Latin word.] 1. The Cup: a small southern constellation 2. The basin-like opening of a volcano.


Crater.

Craters, (krā'terz). In moon, *q.v.*

Crax, (kraks). [Gk. *krazo*, I shout.]= Curassow: the type of Cracidæ, *q.v.*

Cray-fish, (krā). [*Ecrevisse*, the Fr. name.] = Astacus fluviatilis: a lobster-like animal, belonging to Macrura; also called Crawfish.

Cream of tartar = Potassic tartrate = $KC_4H_5O_6$.

Creatine, (kre'a-tīn). [Gk. *kreas*, flesh.]= $C_4H_9N_3O_2$: a base found in meat juice.

Creatinine, (kre'a-ti-nīn). [Creatine, *q.v.*]= $C_4H_9N_3O$: a base obtained from creatine.

Creeps, (krēps). In coal and other mines, where the floor is pushed up in openings by the pressure upon the walls.

Crematogaster, (kre-mat-o-gas'ter). An ant which lives in the hollow spines of the bull's-horn thorn.

Crenilabrus, (kren-i-lā'brus). A fish belonging to Acanthopteri.

Crenic acid, (krē'nik). [Gk. *krene*, well.]= $C_{24}H_{30}O_{19}$: found in mould, especially near springs.

Creosote=Kreasote, *q.v.*

Crescentiace, (kre-sen-ti-ā'se-ē). [Signor Crescenti.]=Crescentiads: small trees, with succulent fruits, belonging to Bignoniales.

Crescent moon, (kres'cent). [L. *cresco*, I grow.]

When only a small crescent-shaped portion of the bright side is turned to the earth, and the moon sets soon after the sun.

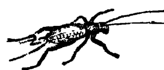
Cress, (kres). [*Cresse*, the A.-S. name.] An herb belonging to Cruciferæ.

Cretaceous series, (krē-tā'she-us). [The Latin word.] The uppermost of the Secondary formations, divided into upper or *chalk*, and lower or *greensand*.

Crevasses, (kre-vas'ez). [The French word.] Deep narrow openings or cracks in an embankment, glacier, &c.

Cribriform plate, (krĭ'bri-form). [L. *cribrum*, sieve; *forma*, form.] In the roof of the nose, separating the nasal cavities from the brain.

Crickets, (krik'ets). [*Criciad*, the Welsh name.] = Achetina: insects which have long hind legs, and can leap a long way, belonging to Orthoptera.


Cricket.

Cricoid cartilage, (krī'-koid). Gk *krikos*, ring; *eidos*, form] A ring of gristle forming the top of the windpipe.

Crinoidea, (kri in-oi'de-a). [Gk. *krinon*, lily; *eidos*, form.] = Crinoids = Pinnigrada = Feather-stars: a division of Echinodermata. Animals with a cup-like body and five arms, fixed by a stalk to the sea bottom.

Crisium=Mare crisium; one of the level portions of the moon's surface; supposed to have been a sea, about 350 by 280 miles in extent.

Crith, (krith). [Gk. *krithe*, barley: a barleycorn.] = ·09 of a gramme nearly; the weight of one litre of hydrogen at the freezing-point of water when the barometer is at 76 centimetres. Used as a standard for the measurement of gases by weight.

Crithmum, (krith'mum)=Samphire; a plant belonging to Apiaceæ.

Critical angle. The angle of incidence at which a ray of light passes along the common surface of two media. If the angle be less than this, the ray is refracted through the second medium; if it be greater, the ray is totally reflected, and returns through the first medium.

Crocodile, (krok'o-dil). [*Krokodeilos*, the Greek name.] = Lacerta crocodilus. *v.* Crocodilia.

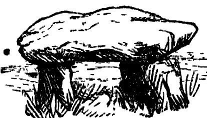
Crocodilia, (krok-o-dil'li-a). [Crocodile, *q.v.*]=Crocodiles, alligators, &c.: a division of carnivorous reptiles, having a covering of horny scales and bony skutes; on river banks in Asia and Africa; found fossil in Lower Tertiary.


Crocodile

Croconic acid, (kro-kon'ik). [Gk. *krokos*, saffron.] = $C_5H_2O_5$: an organic acid, named from its yellow colour.

Crocus, (krō'kus). [*Krokos*, the Greek name.] A stemless plant belonging to Iridaceæ.

Cromlech, (krom'lek). [W. *crom*, bent; *llech*, flat stone.] An ancient erection of a flat stone supported by two others set up endways.


Cromlech.

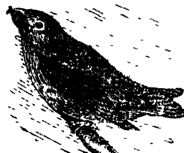
Crop, (krop). [The A.-S. word] A dilation of the gullet in birds, forming a kind of pouch.

Cross-bedding. *v.* Bedding.

Cross-bills, (kros'bilz)=Loxiadæ: a family of birds belonging to Conirostres.

Cross-wort, (kros'-wurt)=Galium cruciata: a plant belonging to Rubiaceæ.

Crossopterygidæ, (kros-sop-ter-ij'i-dē). [Gk. *krossotos*, fringe; *pteryx*, fin.] A group of fishes, remains of which are found in Old Red Sandstone.


Cross-bill.

Crotalaria, (kro-ta-lā'ri-a). [Gk. *krotalon*, rattle.] A plant belonging to Fabaceæ, named from the rattling noise made by its fruit in the wind. *C. juncea*=Bengal hemp.

Crotalidæ, (kro-tal'i-dē). [Crotalus, *q v.*]= Rattlesnakes: venomous snakes, mostly American.

Crotalus, (krot'a-lus). [Gk. *krotalon*, rattle.] =Rattlesnake: a venomous snake, found only in America, whose tail terminates in a number of bony articulations, which make a sound like a rattle.

Croton oil, (krō'ton.) An oil obtained from the seeds of Croton tiglium.

Crotonic acid, (kro-ton'ik). [Croton oil, *q.v.*] $=C_4H_6O_2$: an acid obtained from croton oil.

Crotonylene, (kro-ton'i-lēn). [Croton oil, *q.v.*] $=C_4H_6$: one of the acetylene series of hydrocarbons.

Crow, (krō). [*Crawe*, the A.-S. name.]=Corvus, *q.v.*

Crowberries, (krō'ber-riz)=Empetraceæ. *q.v.*

Crowfoots, (krō'fōtz). = Ranunculaceæ, *q.v.* Plants belonging to Exogens, but approximating to Endogens.

Crowned crane. *v.* Balearica, *q.v.*

Crown-worts, (krown'wurtz)=Malesherbiaceæ, *q.v.*

Crown-wheel. Having teeth cut on the edge of the rim.

Crows, (krōz). [Crow, *q.v.*]=Corvidæ, *q.v.*

Crucible, (krōō'si-bl). [*Crucibulum*, the Latin word.] Vessels for melting metals, &c.; made to endure great heat without damage.

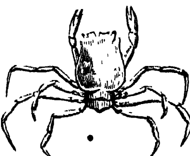
Cruciferæ, (krōō-sif'e-rē). [L. *crux*, cross; *fero*, I bear.]=Crucifers=Cabbages, &c.= Brassicaceæ, *q.v.*

Crura cerebri, (krū'ra ser'e-brī). [L. *crus*, trunk; cerebrum, *q.v.*] Bundles of fibres at

the base of the brain, between the third and fourth nerves.

Crural nerve, (krū'ral). [L. *crus*, a leg.] Branching from the spinal cord in the lumbar region, and going to the thigh.

Crustaceæ, (krus-tā'-se-ē). [L. *crusta.*]= Crabs, lobsters, &c.: a division of Arthropoda; animals of very varied organization; mostly marine, some fresh-water, the aquatic representatives of Articulata. cast their shells periodically, have segmented bodies, with articulate appendages to each segment, and branchiæ for breathing in water; named from having an exoskeleton or crust.


Crustaceæ

Crutch=Escapement, *q v.*

Crux Australis, (kruks aw-strā'lis). [L. *crux*, cross; *australis*, southern]=The Southern Cross, a small but brilliant constellation in the southern heavens, near the pole.

Cryolite, (krī'o-līt). [Gk. *kryos*, ice; *lithos*, stone]=Kryolite: a mineral of the fluorite group.

Cryophorus, (krī-of'o-rus] [Gk. *kryos*, ice; *phoreo*, I bear] An apparatus for freezing water.

Cryptodon, (krip'to-don). [Gk. *kryptos*, hidden, *odous*, tooth] An animal belonging to Anomodontia, *q v.*, known only by fossil remains.

Cryptogamæ, (krip-tog'a-mē). [Gk. *kryptos*, hidden, *gamos*, union.]=Acotyledons=Thallogens, Acrogens, and Rhizogens = Fungi, lichens, ferns, mosses, &c.: plants in which there are no stamens or pistils.

Cryptogamic, (krip-to-gam'ik). [Gk. *kryptos*, hidden; *gamos*, union] Having no visible means of fructification, such as stamens or pistils.

Crystal, (kris'tal). [Gk. *krystallos*, ice.] 1. A natural solid substance, bounded by symmetrical plane faces. 2. A common name for glass.

Crystallin, (kris-tal'lin) [Gk. *krystallos*, ice.] =Globulin, *q v.*

Crystalline, (kris-tal'līn). [Crystal, *q.v.*] Having the nature of a crystal

Crystalline - schists = Gneiss, fine slate, &c : crystalline rocks, devoid of fossils, but stratified.

Crystalline lens. A fibrous, elastic, doubly-convex lens in the eye, separating the aqueous humour of the cornea from the vitreous humour of the sclerotic.

Crystallization, (kris-tal-i-zā'shun). [Crystal, *q.v.*] Slow passage from the liquid to the solid condition when the result is solidification in regular geometrical forms. Analogy of chemical composition is usually accompanied by identity of crystalline form. *Cubical C.:* with three equal axis, all at right angles. *Pyramidal C.* with three axes all at right angles, but the principal axis longer or shorter than the other two. *Rhombic C.:* with three axes at right angles, but no two of equal length. *Oblique C.:* with two axes at right angles, and the third inclined more or less than 90°. *Anorthic C.:* with three axes, none at right angles. *Hexagonal C.:* with the principal axis at right angles with all the other three axes, which are arranged symmetrically in one plane.

Crystallography, (kris-tal-log'ra-fi). [Crystal, *q.v* ; Gk. *grapho*, I write.] The science of the formation of crystals.

Crystalloids, (kris'tal-oidz). [Crystal, *q.v.*: Gk. *eidos*, form] Substances resembling crystals. *cf* Colloids.

Crystal-worts, (kris'tal-wurtz)=Ricciaceæ, *q.v.*

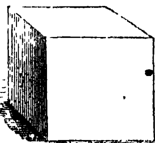
Ctenoid scales, (ten'oid). [Gk. *kteis*, comb; *eidos*, form] Scales fringed with spines.

Ctenophora, (ten-of'o-ra). [Gk. *kteis*, comb; *phoreo*, to bear] Gelatinous oceanic Actinozoa, swimming by means of ctenophores, or comb-like cilia; a sub-division of Cœlenterata.

Ctenophoridæ, (ten-o-for'i-dē). [Gk. *kteis*, comb; *phoreo*, I bear.] A sub-division of Actinozoa: oceanic animals swimming by the use of comb-like bands of cilia, called ctenophores.

Ctenostomata, (ten-os-tom'a-ta). [Gk. *kteis*, comb; *stoma*, mouth.] A division of marine polyzoa; animals having a fringe of hairs round the orifice of the cell.

Cube, (kūb). [*Cubus*, the Latin word.]=A regular hexahedron: a solid figure bounded by six equal squares *C. root.* the number which, multiplied twice by itself, gives a certain number, is the cube root of that number.


Cube.

Cubic system, (kū'bik). [Cube, *q.v.*] With axes rectangular. *v.* Crystallization.

Cuckoo, (kōō-kōō'). [Imitation of its cry.]= Cuculus canorus: a bird belonging to Scansores, some are parasitic in nests of other birds. *C. flies*=Ichneumon= Tachinæ. *C. spits* = Frog - hoppers : larvæ of Cercopidæ. *C. pints*=Arum, *q.v.*


Cuckoo.

Cuculidæ, (kōō-kōō'li-dē). [Cuckoo, *q.v.*]= Cuckoos: birds belonging to Scansores.

Cuculinæ, (kōō-kōō-lī'nē). [Cuckoo, *q v*]= Cuckoo-bees. A family of wasp-like bees, parasitic in the burrows of other bees.

Cucumber, (kū'kum-ber). [*Cucumis*, the Latin name.]=Cucumis sativus: a plant belonging to Cucurbitaceæ, the fruit of which is edible.

Cucumber trees. *v.* Magnolia.

Cucurbita, (kū-ker'bit-a). [The Latin name.]=Gourd: a plant belonging to Cucurbitaceæ, having an edible fruit.

Cucurbitaceæ, (kū-ker-bit-ā'se-ē). [Cucurbita,

q.v.]=Melons, cucumber, &c.: climbing shrubs with succulent leaves and pulpy fruit, belonging to Cucurbitales.

Cucurbitales, (kū-kẹr-bi-tā'lēz). [Cucurbitaceæ, *q.v.*] Plants forming a division of Diclinous Exogens

Cudbear, (kud'bār)=Lecanora tartarea: a lichen.

Culex, (kū'leks). [The Latin name.]=Gnat: an insect belonging to Diptera.

Culicidæ, (ku-lis'i-dē). [Culex, *q.v.*]=Gnats, flies, &c.: insects belonging to Diptera. The males live on flowers; the females are blood-suckers.

Culm, (kulm). [*Cwlm*, the Welsh name.]=Anthracite coal, *q.v.*

Cultirostres, (kul-ti-ros'trēz.) [L. *culter*, ploughshare; *rostrum*, beak.]=Cranes, herons, storks, &c.: birds belonging to Grallatores, named from the form of the beak.

Cumbrian rocks, (kum'bri-an). [Cumbria, Cumberland.]=Cambrian rocks, *q.v.*

Cumin, (kum'in). [*Cuminum*, the Latin name.]=Cuminum: an herb belonging to Apiaceæ. *Essence of C.*=$C_{10}H_{12}O$=Cumyl hydride=Cuminic aldehyd.

Cuminic. *C. series:* a series of compounds containing the radicle cumyl; including C. acid=$C_{10}H_{12}O_2$: a crystalline substance obtained from essence of cumin.; C. alcohol =$C_{10}H_{14}O$; Cumyl; Cumyl-chloride, &c.

Cuminylia, (ku-mi-nil'i-a). [Cumin, *q.v.*]= $C_9H_{13}N$: one of the aniline bases.

Cumol, (kū'mol)=Trimethyl benzol=C_9H_{12}: a hydrocarbon obtained from cuminic acid and from coal tar; also called Cumene.

Cumulo-stratus: clouds intermediate between the cumulus and the stratus.

Cumulus, (kū'mu-lus). [L. *cumulus*, heap.] =Cloud of the day: a conical heap of cloud caused by warm air rising.

Cumyl=$(C_{10}H_{11}O)_2$: Dicumyl: a heavy oily substance, the radicle of the cuminic series. *C. chloride*=$C_{10}H_{11}OCl$. *C. hydride*=$C_{10}H_{12}O$=Cuminic aldehyd.

Cuneiform, (kū'ne-i-form). [L. *cuneus*, wedge] =Cuneate: wedge-shaped. *C. inscriptions:* in wedge-like characters, resembling the heads of arrows or of nails.

Cunoniaceæ, (kū-non-i-ā'se-ē). [John Christian Cuno.]=Cunoniads: shrubs and trees belonging to Saxifragales.

Cupel, (kū'pel). [L. *cupella*, a small cask.] A shallow crucible used in cupellation.

Cupellation, (kū-pel-lā'shun). [Cupel, *q.v.*] 1. A method of separating silver from lead by heating in a cupel, when the lead becomes oxidized and leaves the silver. 2. Generally any process of metallurgy in which a cupel is employed.

Cup lead. A long leaden weight having a cup-like cavity, closed by a leather valve, used in deep sea dredging.

Cupola, (kū'po-la). [The Italian word] 1. A dome. *C. furnace:* a furnace having a cupola or dome. 2. The inside of a dome

Cupreous, (kū'pre-us). [The Latin word.] Copper-like: made of copper. *C. oxide*= Cu_2O=Red oxide of copper.

Cupressus, (kū-pres'sus). [L. *cupressus*, cypress.] 1. Cypress: an evergreen tree, belonging to Pinaceæ. 2. A Lias fossil, probably a coniferous plant.

Cupric, (kū'prik). [Cuprum.] Copper-like: made of copper. *C. oxide*=CuO=Black oxide of copper.

Cuprite, (kū'prīt). [Cuprum, *q.v.*] One of the copper group of minerals, crystallises in cubes, chiefly suboxide of copper, Cu_2O.

Cuprum, (kū'prum). [The Latin word.]= "Cu"=Copper, *q.v.*

Curassow, (kū-ras'sō).=Crax globicera: a turkey-like bird.

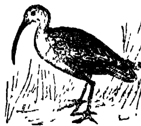
Curb-roof=Mansard roof, *q.v.*

Curcuma, (kẹr'ku-ma). [*Kurkum*, the Arabic name.] A plant belonging to Zingiberaceæ. *v.* Turmeric.

Curcumin, (kẹr'ku-min). [Curcuma, *q.v.*] $C_{10}H_{10}O_3$: a resinous yellow colouring matter obtained from turmeric.

Curd. The coagulated casein of butter, which is made into cheese by being pressed.

Curlew, (kẹr'lū). [*Corlieu*, the French name.] =Numenius: a bird belonging to Grallatores.


Curlew.

Currant, (kur'ant). [Corruption of Corinth] 1. A small dried grape, first brought from Corinth. 2. The fruit of some species of Ribes. *Red C.*=Fruit of Ribes rubrum. *Black C.*=Fruit of Ribes nigrum. *C. galls* =Made by Cynips Kollari.

Current, (kur'ent). [L. *curro*, I run] A stream of flowing water. *C. electricity*= Galvanism, *q.v.*

Currying, (kur'ri-ing). The oiling and smoothing process by which a tanned hide is made into leather.

Cursores, (kẹr-sō'rēz). [L. *cursor*, runner.]= Runners: ostriches, cassowary, &c.: large birds having rudimentary wings and long strong legs.

Cursoria, (kẹr-sō'ri-a). [L. *cursor*, runner.] Insects, including the cockroach, especially adapted forrunning, belonging to Orthoptera.

Curves, (kẹrvz). [L. *curvus*, arched.] Lines which constantly change their direction.

Cuscuta, (kus'ku-ta). [The Latin name.]= Dodder: the type of Cuscutaceæ, *q.v.*

Cuscutaceæ, (kus-ku-tā'she-ē). [Ar. *kechout.*] =Dodders: parasitic leafless plants belonging to Solanales.

Cushioning of steam. The gradual stoppage of the piston by the resistance of a small quantity of steam left in the cylinder.

Cusp, (kusp). [L. *cuspis*, a point.] 1. A point formed by the meeting of two curved lines. 2. Leaf-like projections in Gothic windows, &c.

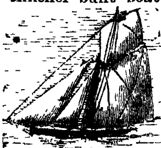
Custard apple, (kus'tard)=Anona reticulata: a plant belonging to Anonaceæ, *q.v.*

Cuticle, (kū'ti-kl). [*Cuticula*, the Latin word.]=Scarf-skin. *v.* Skin.

Cutis, (kū'tis). [The Latin word.]=Skin=

Derma=Corium: the vascular layer of true skin beneath the epidermis.

Cutter, (kut'ter). 1. A clincher built boat about 25 ft. long. 2. A sloop-rigged vessel with one mast.


Cutter

Cuttle-fishes, (kut'tl). [*Kuttel-fisch*, the German name.] Active and rapacious animals, belonging to Cephalopoda, *q.v.*, divided into Octopoda and Decapoda. *C. bone*=Pen; the calcareous internal skeleton of a cuttle-fish.

Cuvier's classification of animals:—

Vertebrata—
- Mammalia.
- Aves.
- Reptilia.
- Pisces.

Mollusca—
- Cephalopoda.
- Pteropoda
- Gasteropoda.
- Acephala.
- Brachiopoda.
- Cirrhopoda.

Articulata—
- Annelida.
- Crustacea.
- Arachnida.
- Insecta.

Radiata—
- Echinodermata.
- Intestina.
- Acalepha.
- Polypi.
- Infusoria.

Cyanæa, (sī-a-nē'a). [L. *cyaneus*, sea-blue.] Animals belonging to Discophora, *q.v.*; in one species, the umbrella is 7 ft. in diameter, and the tentacles 30 to 40 ft. long.

Cyanamide, (sī-an'a-mīd). [*Cyanic* and *Amide*, *q.v.*]=CH_2N_2: the amide of cyanic acid=Ammonia in which one equivalent of hydrogen is replaced by one of cyanogen.

Cyanates, (sī-a-nātz'). [Cyanic, *q.v.*] Salts formed by the combination of cyanic acid with bases.

Cyanazobenzol, (sī-an-az-o-ben'zol). [*Cyanogen*: *azote* and *benzol*.] *v.* Benzhydramide.

Cyanhydric acid, (sī-an-hī'drik)=CNH=Hydrocyanic acid=Prussic acid.

Cyanic, (sī'an-ik). [Cyanogen, *q.v.*] *C. acid* =HCyO: a very volatile pungent liquid, at one time called cyanous acid. *C. chloride* =Chloride of cyanogen. *C. ether* = C_6H_5 CNO = Ethyl cyanate: a volatile liquid from which Ethylia is obtained.

Cyanides, (sī'a-nīdz). [Cyanogen, *q.v.*] Compounds of cyanogen with bases.

Cyanin, (sī'a-nin). [Gk. *kyanos*, blue.] The colouring matter in blue and red flowers.

Cyanite, (sī'a-nīt). [Gk. *kyanos*, blue.] 1. A salt of cyanous acid. *v.* Cyanic acid. 2. A mineral, chiefly silicate of alumina.

Cyanogen, (sī-an'o-jen). [Gk. *kyanos*, blue; *gennao*, I produce.]=CN=Cy: a compound, colourless, inflammable, poisonous gas, which combines with elementary substances in the same manner as an element; the chief constituent of Prussian blue=Oxalo-nitrile.

Cyanuric, (sī-a-nū'rik). [Cyanogen, *q.v.*] *C. acid* = $C_3H_3N_3O_3$: a tribasic, crystalline, acid substance. *C. ether*=$(C_2H_5)_3$ $C_3N_3O_3$= Tri-ethyl cyanurate: a crystalline substance.

Cycadeaceæ, (sī-kad-ā'so-ē). [Cycas, *q.v.*]= Cycads: small fern-like trees with pithy stems, belonging to Gymnogens, related to Coniferæ; fossil remains found in Trias rocks.

Cycadeæ, (sī-kad'e-ē)=Cycadeaceæ, *q.v.*

Cycas, (sī'kas). [*Kykas*, the Greek name for a small palm-tree.] The typical form of Cycadeaceæ.

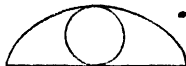
Cyclamen, (sik'la-men). [Gk. *kyklos*, circle or spiral]=Sow-bread: a plant belonging to Primulaceæ, named from its spiral peduncle.

Cycle, (sī'kl). [Gk. *kyklos*, circle.] A circle, used especially of the recurrence of astronomical phenomena at long intervals of time. *C. of sun*=28 years, when the same days come on the same dates. *C. of moon*=19 years. *Metonic C.*=19 years, when the eclipses, &c., recur in the same order.

Cyclobranchiata, (sī-klo-brang-ki-ā'ta). [Gk. *kyklos*, ring; *bragkia*, gills.] Chitons: molluscous animals forming a sub-division of Gasteropoda.

Cyclodus, (sī'klo-dus). [Gk. *kyklos*, circle; *odous*, tooth.] A lizard, named from its teeth having a rounded surface.

Cycloid, (sī'kloid). [Gk. *kyklos*, circle; *eidos*, form.] 1. A curved line traced by a point in the circumference of a circle revolving on a plane in a straight line. 2. Having a regularly circular or oval form. *C. scales* of fishes: thin horny scales, more or less circular in shape, and having usually smooth edges.


Cycloid.

Cyclone, (sī'klōn). [Gk. *kyklos*, circle.] A hurricane blowing more or less in a circle.

Cyclopean, (sī-klō-pē'an). [Gk. *kyklops*, a giant.] Relating to the Cyclops; also used generally for anything of enormous size or strength.

Cyclosis, (sī-klō'sis). [*Kyklosis*, the Greek word.] 1. The circulation within the cells of vegetable tissues. 2. Also used to express the existence of cycles.

Cyclostoma, (sī-klos'to-ma). [Gk. *kyklos*, circle; *stoma*, mouth.] Owen's term for Lampreys and Hag-fishes, which have sucker-like mouths: also called Cyclostomata.

Cygnidæ, (sig'ni-dē). [Cygnus, *q.v.*]=Swans: a division of birds belonging to Natatores.

Cygnus, (sig'nus). [The Latin word.] 1. The Swan: one of the northern constellations, of which Deneb and Albiero are the chief stars. 2. Swan: an aquatic bird, of graceful form, belonging to Cygnidæ.

Cyme, (sīm). [L. *cyma*, a young sprout.]

A cluster of flowers, flat or rounded, springing from different points of the flower stalk.

Cymene, (sī'mōn)=$C_{10}H_{14}$: from camphor=Cymol, *q.v.*

Cyminylia, (sī'min-i-li-a). One of the aniline bases.

Cymol, (sī'mol)=$C_{10}H_{14}$: a hydrocarbon obtained from camphor, by depriving it of the elements of water; and also found in essence of cumin.

Cymyl=$C_{10}H_{13}$: the radicle of the cymylic series.

Cynipidæ, (sin-ip'i-dē). [Cynips, *q.v.*]=Gall-flies: insects belonging to Hymenoptera.

Cynips, (sin'ips). [Gk. *knips*, gnat.] Gall-fly: an insect belonging to Hymenoptera, named from causing galls, *q.v.*

Cynocephalus, (sin-o-sef'a-lus). [Gk. *kyon*, dog; *kephale*, head.]=Baboon, *q.v.*: a large and brutal ape: found only in Africa and Arabia.

Cynoglossum, (sin-o-glos'sum). [Gk. *kyon*, dog; and *glossa*, tongue.]=Hound's tongue: a plant belonging to Boraginaceæ.

Cynopithecinæ, (sin-o-pith-ē'sin-ē) [Gk. *kyon*, dog; *pithekos*, ape.] A family of apes, resembling the baboon, which have cheek pouches.

Cynopithecus, (sin-o-pi-thē'kus). [Gk *kyon*, dog; *pithekos*, ape.] An ape resembling the baboon.

Cynosure, (sin'o-sūr). [*Cynosura*, the Latin name.]=The Lesser Bear=Ursa minor, *q v.*

Cynosurus, (sin-o-sū'rus). [Gk. *kyon*, dog: *oura*, tail.]=Dog's-tail grass: a plant belonging to Graminaceæ.

Cyperaceæ, (si-per-ā'se-ē). [*Cyperus*, the typical genus.]=Sedges: common grass-like plants with solid stems, sheathing leaves, belonging to Glumales.

Cyperites, (sī'per-its or sī-per-ī'tēz) [Cyperaceæ, *q v.*] Long narrow leaves of sigillariæ, found fossil in carboniferous rocks.

Cyprinidæ, (sī-prin'i-dē). [1. L. *cyprinus*, carp. 2. *Cyprina*, the typical genus.] 1. Carp, roach, &c.: a family of fishes, of which the carp is the type. 2. Molluscous animals, joining a family of Lamellibranchiata.

Cyrena, (sī-rē'na). A bivalve mollusc, found in Tertiary rocks.

Cyrene, (sī-rē'ne). [Classical.] A minor planet, No. 133. Discovered in 1873.

Cyrillaceæ, (sir-il-lā'se-ē). [Signor Cyrillo.] =Cyrillads: evergreen shrubs, belonging to Berberales.

Cyrillus, (si-ril'lus). [Classical.] A crater in the moon. 60 miles in diameter.

Cyst, (sist). [Gk. *kystes*, bladder.] A general term for a small sac or bladder.

Cysticercus, (sis'ti-ser-kus). [Gk. *kystos*, bladder; *kerkos*, tail.] An immature form of Tænia, *q.v.*

Cystic worms, (sis'tik). [L. *cysticus*.]=Cisticа: immature forms of tape-worms.

Cystici, (sis'ti-sī). [Gk. *kystos*, bladder.] Used by Siebold for a sub-division of Helminthes.

Cystidea, (sis-tid'i-a). [Gk. *kystos*, bladder; *eidos*, form.] An extinct group of animals, belonging to Echinodermata, found only in Palæozoic rocks.

Cystidia, (sis-tid'i-a). [Gk. *kystos*, bladder.] Bodies resembling basidia, but without spores, found on mushrooms.

Cystiform Helminthozoa=Hydatids, *q.v.*

Cystoidea, (sis-toi'de-a). [Gk. *kystis*, bladder; *eidos*, form.]=Cystidea: an order of Echinodermata, known only by fossil remains in Palæozoic rocks. *v.* Hyponome.

Cytinaceæ, (sī-tin-ā'se-ē). [Cytinus, the typical genus.]=Cistus-rapes: plants, parasitic on roots of Cystus, belonging to Rhizogens.

Cytisus, (sit'i-sus). [*Kytisos*, the Greek name.]=Broom: a shrub, with small gay flowers, belonging to Fabaceæ.

Czechs. A European people.

D.

Dab, (dab). [L. *dabula*.]=Platessa limanda =Pleuronectes limanda: a flounder-like fish.


Dab.

Dabeocia, (dab-e-ō'si-a). [St Dabeoc.] =St. Dabeoc's heath: a shrub belonging to Ericaceæ.

Daboia. A poisonous viper of India.

Dace, (dās). [*Darsen*, the Welsh name.]= Clupea leuciscus= Cyprinus leuciscus = Leuciscus vulgaris: a carp-like fish.


Dace.

Dacelo = Australian kingfisher: a bird locally called the laughing jackass.

Dactylethra, (dak-ti-lē'thra). [Gk. *daktylethra*, finger of a glove.] A toad, found in Africa, having no tongue.

Dactylis, (dak'ti-lis). [Gk. *daktylos*.]= Cock's foot-grass: a plant belonging to Graminaceæ.

Dactylopterus, (dak-til-op'ter-us). [Gk. *daktylos*, finger; *pteryx*, fin.]=Flying gurnard: A fish resembling the gurnard, with large pectoral fins, which enable it to rise out of the water.

Dactylus, (dak'ti-lus). [*Daktylos*, the Greek name.] 1. Finger. 2. Date: fruit of Phœnix dactylifera.

Daddy-long-legs = Crane-fly: an insect belonging to Diptera.

Dado, (dā'dō). [It. *dado*, die.]=Plinth of a pedestal: a deep skirting.

Dadoxylon, (da-doks'i-lon). [Gk. *das*, torch;

xylon, wood.] A coniferous plant, fragments of which are found as driftwood in coal measures.

Dadyl, (dā'dil). [Gk. *das*, pine-wood or torch; *hyle*, material.]=Camphine, *q.v.*

Daffodil, (daf'ō-dil). [Corruption of *Asphodelus*, the Latin name.]=Narcissus pseudo-narcissus: a common meadow flower.

Dafila=Pintail ducks: birds belonging to Natatores.

Daguerreotype, (da-ger'o-tīp). [M. Daguerre, its inventor.] The earliest method of photography, in which a silver plate was covered with a coating of iodide and exposed in the camera.

Dahlia, (dā'li-a). [A. Dahl, a Swedish botanist.] A garden flower, belonging to Asteraceæ, much cultivated for its beauty.

Dahomans. An African people.

Daisy, (dā'zi). [A.-S. *dæges eage*, day's eye.] =Bellis: a small meadow flower belonging to Asteraceæ.

Dakosaurus. A Saurian animal, known only by fossil teeth found in Oolite rocks: belongs to Amphicœlian reptiles.

Daltonism, (dal'ton-izm). [Dalton, who suffered from it.]=Achromatopsy=Colour disease: a condition of the eyes in which all colours cannot be fully distinguished.

Dalton's atomic theory. *v.* Atomic theory.

Dam, (dam). [The Danish word.] A wall to resist the pressure of water.

Damascene work, (dam'a-sēn). [Damascus.] =Damask work: 1. Inlaying one metal on another so as to form figures, as on shields, swords, &c. 2. Marking of patterns on polished steel by the action of acids, or by the combination of iron and steel.

Damask-rose, (dam'ask)=Rosa centifolia: a rose marked by variety of colour.

Dame's violet=Hesperis: an herb belonging to Brassicaceæ.

Dammara, (dam'ma-ra). [The native name.] 1. A gum or resin, somewhat like copal, obtained from the tree Dammara Australis or Agathis, belonging to Coniferæ. 2= Kauri pine: a tree belonging to Coniferæ.

Dammaric acid, (dam'ma-rik). [Dammara, *q.v.*] An acid obtained from the kauri pine or dammara.

Damp, (damp). [Ger. *dampf*, vapour.] A miner's term for vapours or gases found in mines. *v. Fire-d.*, *Choke-d.*, and *After-d.*

Damper, (dam'per). A contrivance for (1) moderating the amount of draught in a chimney or pipe; or (2) for moderating the vibration of the wires in a pianoforte.

Damson, (dam'son). [Damascene, *q.v.*] A plum-like fruit, a variety of Prunus domestica.

Danæaceæ, (dā-nē-ā'se-ē). [Signor Dana.]= Danæads: tropical fern-like plants, the most highly developed of Acrogens, forming a sub-division of Filicales.

Dandelion, (dan-de-li'on). [Fr. *dent de leon*, lion's tooth.]=Taraxacum dens leonis= Leontodon taraxacum: a common plant belonging to Asteraceæ.

Dane-wort, (dān-wurt)=Sambucus ebulus: a plant, also called dwarf-elder, belonging to Caprifoliaceæ.

Daniell's. [Professor Daniell, the inventor.] *D. battery*=Constant battery: a galvanic battery in which zinc is placed in sulphuric acid, and copper in saturated sulphate of copper; the action of this is regular for some days. *D. hygrometer*: an instrument for indicating the amount of moisture in the air; a glass bulb containing a thermometer in ether is cooled by evaporation until dew is deposited. *D. pyrometer*: in which very high temperatures are measured by the expansion of a metallic rod.

Danish "kitchen-middens." [D. Kjökkenmödding.] Refuse heaps, usually near the sea, containing fragments of pottery and instruments: proved to be very old by the contained shells, &c.: belong to the Recent Period.

Danish peat. Peat moss in which stone tools are found, and in which all fossil remains are of existing species: belongs to Neolithic Period.

Dapedius, (da-pē'di-us). [Gk. *dapedon*, pavement.]=Dapedium: a ganoid fish, known only by fossil remains found in Lias rocks.

Daphnads, (daf'nads). [Daphne, *q.v.*]=Thymelaceæ: a sub-division of Daphnales.

Daphnales, (daf-nā'lēz). [Daphne, *q.v.*] Shrubs and trees, usually evergreen, forming a sub-division of Perigynous Exogens.

Daphne, (daf'ne). [Gk. *daphne*, laurel.] =Mezereon, &c.: a shrub with odorous flowers, belonging to Thymelaceæ, named from their somewhat resembling laurels. *D. laureola*=Dwarf-bay.

Daphnia, (daf'ni-a)=Water flea: a microscopic crustacean, belonging to Branchiopoda.

Daphnin, (daf'nin). [Daphne, *q.v.*] A crystalline substance obtained from the bark of Daphne mesereum.

Daphnogene, (daf'no-jēn). [Daphne, *q.v.*] A laurel-like plant, found fossil in Eocene and Miocene strata.

Daphnoidea, (daf-noi'de-a). [Daphne, *q.v.*; Gk. *eidos*, form.] 1. A family of Ostracoda, known by fossil remains. 2.=Thymelaceæ: a sub-division of Daphnales, *q.v.*

Dare, (dār)=Dace, *q.v.*

Dark lines of spectrum. A number of narrow lines crossing a spectrum. Those in the spectrum of sunlight are always the same, and are used as standard, being named A, B, C, D, &c. The lines A and B are in the red ray, C between the red and orange, D, E, F, G, and H are in the orange, green, blue, indigo, and violet rays respectively. The number of lines in the solar spectrum is very large, many thousands having been already observed.

Darnel, (dar'nel)=Lolium temulentum: a common plant, the only one of the grass kind which is poisonous.

Dart, (dārt)=Dace, *q.v.*

Darter, (dar'ter). 1.=Plotus, snake-bird: a bird belonging to Natatores, named from its habit of darting at small fish. 2. A fish also called archer fish, *q.v.*

Darwinism, (dăr'win-ism). Used by some as a popular name for the theory of evolution: properly the theory of origin of species by natural selection, named from being first expounded in full detail by Mr. Darwin.

Dasornis, (da-sor'nis) D. Londinensis: an extinct struthious bird, found in London clay, in the Isle of Sheppy.

Dasymeter, (da-sim'e-tẹr). A modification of the manometer, *q.v.*

Dasypoda, (da-sip'o-da). [Gk. *dasys*, shaggy; *pous*, footed.] Bee-like insects belonging to Hymenoptera.

Dasypodidæ, (das-i-pod'i-dē). [Dasypus, *q.v.*] Owen's name for animals such as the armadillo, forming a sub-division of Edentata.

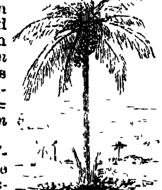
Dasyprocta, (das-i-prok'ta) [Gk. *dasyproktos*, rough bottomed]=Agoutis: hare-like animals belonging to Rodentia.

Dasypus, (das'i-pus). [Gk. *dasypous*, hairy-footed.]=Armadillo: an ant eating burrowing quadruped of S. America, belonging to Edentata, having an armour-like covering of bony scales

Dasyures, (das-i-ū'rēz). [Gk. *dasys*, shaggy; *oura*, tail.] A sub-division of marsupial animals represented by the Dasyurus

Dasyurus, (das-i-ū'rus). [Gk. *dasys*, shaggy; *oura*, tail.] An Australian marsupial carnivorous quadruped belonging to the division Sarcophagas. *Ursine D.*=Tasmanian devil.

Date, (dāt). [Gk. *daktylos*, finger.]=Phœnix dactylifera=Date-palm: a tree common in Syria, Arabia, and N. Africa, named from shape of fruit. *D. plum*=Fruit of Diospyrus Virginiana or Persimmon tree. *D. shells*=Lithodomus *Indian D.*=Diospyros lotus.


Date-tree

Datiscaceæ, (dā-tis-kā'se-ē). [Datisca, the typical genus.]=Datiscads: herbs, sometimes trees, with apetalous flowers, belonging to Cucurbitales.

Datiscin, (dā'tis-sin). [Datisca, *q.v.*]=$C_{21}H_{16}O_7$: a crystalline substance obtained from Datisca cannabina, used as a yellow dye.

Datura, (da-tū'ra). [*Datora*, the Arabic name.]=Thorn-apple, &c.: a plant belonging to Solanaceæ.

Daturia, (da-tū'ri-a). [Datura, *q.v.*]=Atropia, *q.v.*: found also in Datura stramonium.

Daucus, (da-ū'kus). [*Daucum*, the Latin name.]=Carrot: a common herb, with edible root, belonging to Apiaceæ.

Davy's safety lamp. [Invented by Sir H. Davy.] An oil lamp enclosed in a case of fine wire gauze, which cools down the heated gas passing out, and so prevents explosion. If the air be inflammable it burns within the lamp, and so warns the miner of the danger.

Dayaks. An Oceanic race.

Day, (dā). [*Dæg*, the A.-S. name.] *Solar day:* reckoned from noon to noon. *Civil day:* reckoned from midnight to midnight. *Sidereal day*=23*h.* 56*m.* 47*s.*, reckoned from the time of some given star being on the meridian, usually the first point of Aries.

Day's work. The account of a ship's course during 24 hours.

Day flies=Ephemeridæ: a sub-division of Orthoptera; insects which live only a few hours.

Dead. *D. centres:* the two points in the revolution of a crank and axle, at which the crank and connecting rod are in a straight line. *D. dipping*, of brasswork, in nitric acid, to give it a dull appearance. *D. eyes:* a wooden block, pierced with holes for a lanyard. *D. lights:* a shutter over the cabin window of a ship. *D. nettle*=Lamium: an herb belonging to Lamiaceæ. *D. oil:* a heavy yellow oil, obtained from coal naphtha. *D. point:* the two points in the revolution of a crank which are in a line with the connecting rod. *D. reckoning:* that portion of a calculation respecting the position of a ship at sea which is independent of celestial observation. *D. wood:* timbers forming a kind of backing to the stem and stern of a ship.

Deadly nightshade=Atropa belladonna, *q.v.*

Dead-man's hand=Alcyonium digitatum: an asteroid zoophyte; also called Dead-man's toes.

Deal, (dēl). [The A.-S. word.] 1. The timber of the spruce or fir tree. 2. The squared timber of fir trees, about 12 ft. long, 3 in. thick, and 7 in. wide.

Deal-fish = Trachypterus arcticus; a riband-shaped fish, about 3 ft. long, and very thin, belonging to Acanthopterygii.

Death adder=Acanthophis sp.: a viperine snake of Australia.

Death's-head moth = Acherontia atropos: a large hairy moth, marked on the back of the thorax with a resemblance to a skull.

"Death watch," the call of the beetle Anobium.

De Blainville's classification of animals. *v.* Blainville.

Deca, (dek'a). [Gk. *deka*, ten.] A prefix meaning ten. *D. gramme*=10 grammes==154¼ grains. *D. litre*=10 litres=610¼ cubic inches; also called centistere. *D. metre*=10 metres=393⅝ inches. *v* Metric system.

Decagon, (dek'a-gon). [Gk. *deka*, ten; *gonia*, corner.] A figure bounded by ten straight lines.

De Candolle's classification of plants:—

Vascular plants=Cotyledonous plants.
  Exogens=Dicotyledons.
    Thalamifloræ.
    Calycifloræ.
    Corollifloræ.
    Monochlamydeæ.
  Endogens=Monocotyledons.
    Phanerogams.
    Cryptogams.
Cellular plants=Acotyledons.
    Foliaceæ.
    Aphyllæ.

Decagynia, (dek'a-jin-i-a). [Gk. *deka*, ten; *gyne*, woman.] Plants having ten pistils.

Decahedron, (dek-a-hed'ron). [Gk. *deka*, ten, *hedra*, base.] A solid having ten regular faces.

Decandria, (de-kan'dri-a). [Gk. *deka*, ten; *aner*, man.] A class of plants, the flowers of which have ten stamens. A division made by Linnaeus.

Decandrous, (de-kan'drus). [Decandria, *q.v.*] Having ten stamens.

Decapoda, (de-kap'o-da). [Gk *deka*, ten: *pous*, foot.] 1. A division of Crustacea, including lobsters, crabs, &c., which have five pairs of legs; fossil from Carboniferous times till now. 2. A division of Cephalopoda, including cuttle fishes in which the mouth has around it ten arms or processes. 3. De Blainville's term for a division of Articulata, including Crustacea, Limulus, and Decapoda proper.

Decarburization, (de-kär-bū-ri-zā'shun). [L. *de*, from; Carbon, *q.v.*] The removal of carbon from a compound containing it; used especially for the conversion of pig iron into malleable iron.

Decaton, (dek'a-ton)=Fourth segment of abdomen in insects.

Deci, (des'i). [L. *decimus*, tenth.]=One tenth.

Decimetre=$\frac{1}{10}$ metre; nearly 4 inches.

Decigram =$\frac{1}{10}$ gram, $1\frac{1}{2}$ grains.

Decistere =$\frac{1}{10}$ stere=Hectolitre; $6102\frac{2}{3}$ cubic inches.

Decilitre =$\frac{1}{10}$ litre=$6\frac{1}{10}$ cubic inches.

Decime =$\frac{1}{10}$ franc nearly 1d.

v. Metric system.

Decidua, (de-sid'u-a). [L. *deciduus*, falling.] The surface of the modified mucous membrane of the uterus in man, apes, Cheiroptera, &c., during gestation, which at birth falls away.

Deciduata, (dē-sid-u-ā'ta). [L. *decido*, I fall.] The division of Mammalia, including man, apes, Cheiroptera, Insectivora, and Rodentia, which have a decidua during gestation.

Deciduous, (de-sid'u-us). [L. *deciduus*, falling away.] Falling away. *D. cypress*=Taxodium distichum. *D. leaves:* which fall off. *D. plants:* those which shed their leaves every year. *cf.* Evergreens.

Decimal, (des'i-mal). [L. *decem*, ten.] Increasing or diminishing by tens or powers of ten.

Deck, (dek). [A.-S. *decan*, to cover.] The flooring of a ship. *D. hooks*, to connect the deck with the stem and apron of a ship. *D. transoms*=Deck-hooks at stern.

Deckle, (dek'l)=Endless band used in machinery to communicate motion.

Declination, (dek-lin-ā'shun). [L. *declino*, I turn aside.] 1. *D. of magnet;* angle between the geographical N. and the horizontal direction in which a magnet points when freely suspended. *D. compass:* for ascertaining the magnetic declination at any given place. 2. The distance of a heavenly body above or below the celestial equator.

Decoction, (dē-kok'shun). [*Decoctum*, the Latin word.] An extract of an organic substance prepared by boiling.

Decollated, (dē-kol'lat-ed). [L. *decollo*, I behead.]=Truncated: used of spiral shells, of which the termination has been removed.

Decomposition, (dē-kom-pō-zish'un). [L. *de*, from; *compositio*, compound.] The breaking up of any compound into its constituent elements. *D. by electricity:* when an electric current passes through a compound and decomposes it. *D. of light:* the term used to describe the conversion of white light into coloured light, varying from red through the colours of the spectrum to violet.

Decompound, (dē'kom-pound). [De and Compound.]=Twice-compound: used of leaves that are doubly-pinnated.

Decorticalia, (dē-kor-ti-kā'li-a). [L. *decortico*, I take the bark off.] A division of plants by Endlicher, *q.v.*

Decorticated, (de-kor-ti-kā'ted). [L. *decortico*, I take the bark off.]=Disbarked.

Decrepitation, (dē-krep-it-ā'shun). [L. *de*, from; *crepitus*, crackling.] Crackling: a series of small explosions, when some substances are being heated.

Decussated, (de-kus'sa-ted). [L. *decussis*, diagonal crossing.] Crossed at right angles.

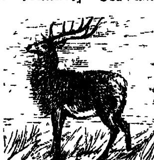
Decussation, (de-kus-sā'shun). [Decussated, *q.v.*] A crossing at right angles.

Decyl hydride=$C_{10}H_{22}$: a hydrocarbon of the Marsh gas series.

Deep-sea coral zone of life. Below 50 faths. *v.* Zones of life.

Deep-sea sounding. Usually by means of a leaden block, of about 1 cwt., having tallow at the bottom, by which samples of the sand, shells, &c, are brought up. Other methods —1. A heavy weight and a fine line, which is cut when the weight reaches the bottom, and the distance known by measuring the remaining line. 2. *The deep sea clamm:* a pair of forceps and a weight, which are closed when they strike the ground, and so enclose some of the mud, &c. 3. *The cup lead.* a long leaden weight, with a cup at the bottom, closed by a leathern lid when filled. 4. *Brooke's apparatus:* a hollow rod, carried down by a heavy shot, which is detached on reaching the ground. 5. *The Bull-dog sounding machine:* a large pair of scoops, carried down by a large weight, which is then detached. 6. *The Fitzgerald sounding machine:* a modification of the *Bull-dog*. 7. *The Hydra sounding machine:* a modification of Brooke's. 8. *Massey sounding machine:* self-registering.

Deer, (dēr). [*Deor*, the A.-S. name.]=Cervus: a ruminant quadruped, belonging to the group of Cervidæ, the males only of which have deciduous antlers: excepting the rein-deer, of which the female also is horned.


Deer.

Definite integration. *See* Integration.

Deflagrator, (dē-fla-grā'tor). [L. *deflagro*, I burn up.] An apparatus for producing

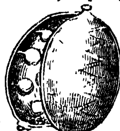
deflagration or brilliant combustion. *Hare's D.*=Hare's battery, which produces great heat.

Deflection of magnet. The change of direction in a freely suspended magnetised needle when any external force, such as a Voltaic current, counteracts, wholly or partially, the magnetic attraction of the earth.

Deglutition, (deg-lū-tish'un). [L. *de*, down; *glutio*, I swallow.] The swallowing of food previous to digestion.

Degree. The circumference of every circle is divided into 360 equal parts, called degrees, written 360°, so that one degree is $\frac{1}{360}$ of the circle. The radius of a circle in moving half way round the circle moves through 180°, and through one degree if it move through $\frac{1}{180}$ of the whole. *D of latitude*=69½ statute miles, or 60 nautical miles. *D. of longitude*: varies from 0 at the poles to $\frac{1}{360}$ of the equator. *D. of thermometer—Fahrenheit D.*: $\frac{1}{180}$ of the distance between freezing and boiling points of water. *Centigrade D.*: $\frac{1}{100}$ of the distance between freezing and boiling points of water. *Reamur D.*: $\frac{1}{80}$ of the distance between freezing and boiling points of water.

Dehiscence, (de-his'ens). [L. *dehisco*, I open.] The opening of any enclosure, as of a seed-vessel when ripe.


Dehiscent

Dehiscent. Opens when ripe.

Dehydration, (de-hid-rā'-shun). [L. *de*, from; Gk. *hydor*, water.] The removal of water from any compound, containing it as a constituent.

Deinosauria, (dī-nō-saw'ri-a). [Gk. *deinos*, terrible; *saura*, lizard.] An extinct order of reptiles=Dinosauria, *q v.*

Deka, (dek'a). [The Greek word]=10 times. Dekametre = 10 metres; Dekagram = 10 grams; Dekastere=10 steres; Dekalitre=10 litres.

Dekametre, (dek-a-mē'tr). [Gk. *deka*, ten; Metre, *q.v.*]=Kette of N. Germany=Ten metres=393·7079 inches.

Delambre. A crater in the moon, 26 miles in diameter.

De la Rive's floating battery. A small galvanic cell fastened on a cork so as to float freely on water.

Deleuil's air-pump. In which, to avoid friction and heat, the piston is not in contact with the cylinder in which it works, the very small space between being filled with air which adheres to the piston.

Delfim, (del'fim)=Coryphæna Nortoniana: a fish of Madeira.

Deliquescent, (de-lik-wes'ent). [L *de*, from; *liquesco*, I become fluid.] Absorbing moisture, and in consequence becoming liquid or soft.

Delisle's method of observing a transit, in which the apparent times of ingress and egress are noted at different places on the earth's surface, from which the orbit may be deduced.

De Lorme system. In construction of bows, or supports for roofs or bridges, in which a number of pieces of timber is formed into a bow or arch.

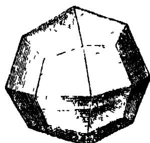
Delphinidæ, (del-fin'i-dē). [Gk. *delphin*, dolphin.] A division of Cetaceæ, including dolphins, porpoises, &c.

Delphinium, (del-fin'i-um). [Gk. *delphin*, dolphin.]=Larkspur: an herb, common in temperate climates, belonging to Ranunculaceæ, named from the shape of its flowers.

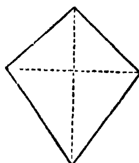
Delphinus, (del'fin-us). [Gk. *delphin*, dolphin.] 1.=Dolphin: an animal resembling the whale, but having a smaller head, the type of Delphinidæ. 2.=The Dolphin: a small constellation of stars, all of small magnitude, in the northern heavens.

Delta, (del ta). [Δ The fourth letter of the Greek alphabet.] Alluvial land, usually triangular in shape, deposited at the mouth of a large river, formed of the soil brought down by the river. *D moths*=Deltoides: named from shape of wings, belonging to Lepidoptera.

Deltohedron, (del-tō-hed'ron). [Delta, *q.v.*; Gk. *hedra*, base] A solid figure the surface of which is formed by twenty-four deltoids.


Deltohedron

Deltoid, (del'toid). [Delta, *q.v.*; Gk. *eidos*, form] 1. A four-sided figure, formed of two unequal isosceles triangles on different sides of a common base. 2. A triangular muscle covering the shoulder joint.


Deltoid

Delvauxite. A resin-like mineral, chiefly phosphate of iron.

Dematiei=Black-moulds: fungi, belonging to Hyphomycetes, which have a cortex or bark, and a dingy colour.

Demilune, (dem-i-lūn'). [F. *demi*, half; *lune*, moon] In a fortification, an outwork, usually crescent-shaped.

Demodex, (dem'o-deks). [Gk. *demos*, fat; *dex*, worm.] A microscopic arachnid found in human fat.

Demoiselle, (dem-waw-sel'). [The French name] 1. Numidian crane: a bird belonging to Grallatores. 2. A dragon fly=Calopteryx virgo.

Demoivre's theorems. 1. That of any group of eighty-six persons born at one time, one, and one only, will die every year. 2. In Trigonometry: $(\sin. \theta + \cos. \theta\sqrt{-1})^n = (\sin n\theta + \cos. n\theta\sqrt{-1})$

Demulcents, (dē-mul'sents). [L. *demulceo*, I soothe.] Anything of a soothing or softening nature, used especially of medicals used to allay irritation.

Dendrerpeton, (den-drer'pe-ton). [Gk. *den-*

dron, tree; *herpeton*, reptile.] A reptile of the lizard kind, two species of which were found in a tree in the lower Coal Measure.

Dendriform, (den'dri-form). [Gk. *dendron*, tree.] Tree-like.

Dendrites, (den'drīts, or den-drī'tēz). [Gk. *dendron*, tree.] Any veins of altered or foreign matter, in rocks, which have a branching or tree-like appearance.

Dendrobium. [*Dendron*, tree: *bios*, life.] Orchidaceæ: *q.v.* grow on trees.

Dendrocœli, (den-drō-sē'li). [Gk. *dendron*, tree; *koilia*, intestines.] Used by Siebold for a sub-division of Turbellarii, including those whose intestines are branched in a tree-like manner.

Dendrodus, (den'dro-dus). [Gk. *dendron*, tree: *odous*, tooth.] A fish, belonging to Holoptychus, known only by fossil teeth, which have a branch-like tissue.

Dendrohyrax, (den-drō-hī'raks). [Gk. *dendron*, tree; Hyrax, *q.v.*] An arboreal species of Hyrax, *q.v.*

Dendroid, (den'droid). [Gk. *dendron*, tree; *eidos*, form.]=Tree like.

Dendrolagus, (den-drol'a-gus). [Gk. *dendron*, tree; *lagos*, hare.] A species of kangaroo, found in New Guinea, adapted to tree life.

Dendrolitharia, (den-drō-li-thā'ri-a). [Gk. *dendron*, tree; *lithos*, stone.] De Blainville's term for coral polyps.

Dendrophyllia, (den-drō-fil'li-a). [Gk. *dendron*, tree; *phyllon*, leaf.] A coral polyp which buds into a tree-like form.

Dendropupa, (den-drō pū'pa). [Gk. *dendron*, tree; L. *pupa*, puppet.]=Pupa vetusta: a land snail, known by shells found in palæozoic rocks.

Deneb=*α* Cygni: a star in the constellation Cygnus.

Denebola=*β* Leonis: a star in the constellation Leo.

Denominator, (dē-nom'i-nā-tor). [L. *denomino*, I name.] The lower number of a fraction which shows into how many parts the unit is divided.

Densimeter, (den-sim'e-tər). [L. *densus*, thick; *metrum*, measure.] An apparatus for measuring the specific gravity of liquids.

Density, (den'si-ti). [L. *densus*, thick.]= Specific gravity. *D. of electricity*=Intensity of E.

Dental formulæ. $I\frac{m}{m}\ C\frac{m}{m}\ PM\frac{m}{m}\ M\frac{m}{m}$: I=Incisors; C=Canines; P.M=Premolars; M=Molars; $\frac{m}{m}$ expresses the number of each kind of teeth on each side of each jaw. D prefixed to each expresses the deciduous or first set of teeth.

Dentalidæ, (den-tal'i-dē)=Tooth-shells.

Dentalina, (den-tal'i-na). [Dim. of L. *dens*, tooth.] A small gasteropod.

Dentalium, (den-tā'li-um). [L. *dens*, tooth.] =Tooth-shell: a small marine molluscous animal, belonging to the Pteropoda or Gasteropoda, the shell of which resembles a small tusk.

Dentaria, (den-tā'ri-a). [L. *dens*, tooth.]= Tooth-wort=Coral root: an herb, with large purple flower, belonging to Brassicaceæ, named from the scales on the roots, which look like teeth.

Dentary bone, (den'ta-ri). [L. *dens*, tooth.] The bone in Vertebrata generally, which corresponds to the lower jaw in man.

Dentate, (den'tāt) [L. *dentatus*, having teeth.]=Tooth-edged.

Denticles, (den'ti-klz). [Dim. of L. *dens*, tooth.] Small teeth, a number of which make up the compound tooth which is found only in the Cape Ant-eater.

Denticulate, (den-tik'ū-lāt). [L. *denticulatus*, toothed.] Having fine teeth.

Dentine, (den'tin). [L. *dens*, tooth.] A dense substance, resembling bone, which forms the greater portion of teeth.

Dentirostres, (den-ti-ros'trēz). [L. *dens*, tooth; *rostrum*, beak.] A sub-division of Insessores, including shrikes, warblers, thrushes, and other birds having a tooth-like projection in the beak.

Dentition, (den-tish'un). [L. *dens*, tooth.]= Number and arrangement of teeth.

Denudation, (de-nū-dā'shun) [L. *denudo*, I lay bare.] Removal of solid matter by water or air. *Aqueous D.*: removal by water. *Subaerial D.*: removal by wind, rain, &c. *Littoral D.*: removal by water between high and lower water marks.

Deodar, (de'o-dàr). [The Hindoo name.] A very durable wood, the timber of an Indian tree belonging to Pinaceæ. *D. cedar*=Cedrus deodara.

Deodorisers, (dē-ō-do-rī'zərz.) [L. *de*, from; *odor*, smell.] Substances which cause removal of offensive odours by causing the presence of others. *cf.* Disinfection.

Deoxidation, (dē-oks-i-dā'shun). [L. *de*, from; Oxide, *q.v.*] The separation of oxygen from a substance containing it, usually by means of heat.

De Pambour's theory of steam power. $Av = m\,S\frac{P}{R}$, A=Area of piston in feet, *v*=Velocity of piston; S=Quantity of water evaporated; P=Pressure in boiler; R=Resistance against the piston; *m*=Ratio of steam formed to water.

Departure, (dē-pàr'tūr). The distance which a ship has gone east or west of its original meridian.

Dephlogisticated, *v.* Phlogiston.

Depolarization, (dē-pō-la-ri-zā'shun). [L. *de*, from; Polarization, *q.v.*] The double refraction of a ray of polarised light.

Depressor muscles, (de-pres'sor). [L. *depressus*, low.] Those used to lower the parts to which they are attached.

Derbyshire. *D. neck*=Goitre: an enlargement of the thyroid gland, causing a swelling in the upper and fore part of the neck; also called Bronchocele. *D. spar* =Blue John; a mineral, chiefly fluoride of calcium.

Derived current. The current which passes along a wire which is connected at each end with a wire along which a current is already passing.

Derma, (der'ma). [The Greek word.]=Cutis, *q.v.*: the true skin.

Dermatology, (der-mat-ol'o-ji). [Gk. *derma*, skin; *logos*, science.] The science of the nature and structure of the skin.

Dermatophytes, (der-ma-tof'i-tēz.) [Gk. *derma*, skin; *phyton*, plant.]=Skin-plants, *q.v.*

Dermatoptera, (der-ma-top'ter-a). [Gk. *derma*, skin; *pterōn*, wing.]=Earwigs: a division of Orthoptera, having membraneous wings; also called Dermaptera, and considered as belonging to Coleoptera.

Dermatozoa, (der-mat-o-zō'a). [Gk. *derma*, skin; *zoon*, animal.] Fitzinger's term for Acephala, Cephalopoda, and other Mollusca.

Dermestidæ, (der-mest'i-dē). [Derma, *q v.*]=Skin-eaters: a family of beetles, belonging to Necrophaga.

Dermis, (der'mis). [Gk. *derma*, skin.] The real skin, below the epidermis, which bleeds when cut.

Dermopteri, (der-mop'ter-i). [Gk. *derma*, skin; *pteryx*, fin.] Owen's name for vermiform limbless fishes.

Derrick crane, (der'rik). One used for raising heavy weights: sometimes used for those entirely above ground; at others for a crane having a spar with stays; more especially for a crane mounted on a barge.

Desert, (dez'ert). [L. *desertus*, forsaken.] A sandy plain in which both water and vegetation are rare, probably the bed of a dried-up gulf or bay. *D. birds:* quails, grouse, ibis, larks, &c., have the upper plumes sand-coloured. *D. quadrupeds:* mostly sand-coloured: lion, antelope, camel, kangaroo, pampas cat.

Desiccation, (des-si-kā'shun). [L. *desicco*, I dry up.] Drying.

Desman, (dez man)=Sorex moschatus=Musk rat, *q.v.*: a small aquatic insectivorous quadruped, which has a scent gland near tail.

Desmidieæ, (des-mi-di'e-ē) [Gk. *desmos*, chain; *eidos*, form.] A sub-division of Diatomaceæ; also supposed to be animals of very low organization; very small, fresh-water, green algæ, named from their cohesion to each other.

Desmids, (des'midz). [G. *desmos*, chain.] Ciliated infusoria. *v.* Ciliati.

Desmodium. [*Desmos*, band.] A plant belonging to Fabaceæ.

Desmodus, (dez'mo-dus). [Gk. *desmos*, band; *odous*, tooth.] A bat; also called blood-sucker.

Desmognathus, (des-mog'nath-us). [Gk. *desmos*, band; *gnathos*, jaw.] An eft, belonging to Urodela.

Desmoncus, (des-mon'kus). [Gk. *desmos*, bond; *ogkos*, hook.] A palm-tree having tendrils at the points of the leaves.

Despretz's law. That conducted heat decreases in geometrical ratio as the distance from its source increases in arithmetical ratio.

Despretz's method (1) of finding greatest density of water, by noticing the lowest point of a water thermometer; (2) of measuring conductivity of metals for heat.

Desquamation, (des-kwā-mā'shun). [L. *desquamo*, I peel off.]=A peeling off: a falling off of scales.

Desvauxiaceæ, (dez-vō-zi-ā'se-ē). [M. Desvaux.]=Bristle-worts: small herbs of New Holland, &c., with sheathing leaves and terminal flowers, belonging to Glumales.

Detent, (dē-tent'). [L. *detineo*, I hold back.] A catch to prevent a wheel from moving in the wrong direction.

Detergents, (dē-ter'jents). [L. *detergeo*, I rub off.] Such substances as chlorine, soap, potash leys, chloride of lime, &c.

Detritus, (dē-trī'tus). [L. *detero*, I rub away.] Small fragments of rocks and trees worn off by rain, &c.

Deuto, (dū'tō). [Gk. *deuteros*, second.]=Di=Bi: a prefix implying the presence of two atoms of one chemical element with one atom of another, as deutoxide = Dioxide; deutosulphide=Disulphide=Bisulphide.

Deutyl, (dūtyl). A new name for ethyl. Deutylic=Ethylic.

Development, (dē-vel'op-ment). [F. *developper*, to uncover.] 1. The third process in photography, *q v.* 2. A general term for the passage of individual plants or animals from the embryo towards the adult condition. 3. The expansion of a mathematical term into a series. *v.* Series.

Development:—*v.* (2) preceding word.

Continuous D.: Growth=Increase in size without change of form or texture.
Metamorphosis=Alteration of form and texture, but not of size.
Gemmation without fission=Growth and metamorphosis combined.

Discontinuous D.=Gemmation with fission.

Agamogenesis. { Metagenesis, Parthenogenesis.

Gamogenesis=Sexual reproduction.

Also,

Central, { Unicentral. Multicentral, { Continuous. Discontinuous.

Axial,.... Uniaxial, { Continuous. Discontinuous.

Deviation, (dē-vi-ā'shun)=Local attraction: as of masses of iron in a ship which affect the position of the ship's compass.

Devil, (dev'il). [*Diafol*, the A.-S. word.]=Didelphis ursina=Dasyurus, *q.v.*: an Australian marsupial animal. *D. monkey*=Cuxio=Pithecia satanas.

Devil's:—*D. bit*=Helonias dioica: an American plant. *D. bit scabious*=Scabiosa succisa. *D. apple* = Mandrake. *D. dung* = Ferula assafœtida. *D. dye*=Indigofera. *D. fig*=Argemone Mexicana. *D. lay*=Urtica urentissima: a nettle. *D. coach-horse*=Ocypus olens: a beetle belonging to Brachyletra. *D. milk*= Euphorbia peplus. *D. wort* = Plumbago scandens. *D. turnip*=Bryonia.

Devitrification, (dē-vit-ri-fi-kā'shun). [L. *de*, from; *vitrum*, glass; *facio*, I make.] A process by which glass is converted into porce-

lain, by heating it to a high temperature: when, on cooling slowly, it becomes white and opaque

Devonian strata, (De-vō'ni-an). [Devonshire.] Marine and fresh-water beds, corresponding to Old Red Sandstone, found in S. of England, between the Silurian and Coal formations, having numerous fossil remains of fish. The term Devonian is sometimes reserved for marine strata. The term Old Red Sandstone is sometimes reserved for fresh-water strata. Upper Devonian=Pilto.

Devourer-beetle=Broscus.

Dew, (dū). [*Deaw,* the A.-S. name.] Small globules of water, deposited chiefly at night time upon solid bodies that are colder than the air, hoar frost is frozen dew. *D. berry:* a variety of Rubus fruticosus, or blackberry. *D. claw:* a rudimentary fifth digit, found in Newfoundland puppies.

Dewlap, (dū'lap). [Dew, *q.v.*; *lap,* to lick.] Folds of loose skin hanging from the neck in oxen.

Dew-worm=Lob-worm=Earth-worm, *q.v.*

Dextral, (deks'tral). [*Dexter,* the Latin word.] =Right-handed.

Dextrin, (deks'trin)=Dextrine. [L. *dexter,* right-handed.]=$C_6H_{10}O_5$: a transparent brittle gum, which is obtained from starch, and causes right-handed rotation in polarised light; one of the amyloids. Also called British gum.

Dextrogyre, (deks-trō-jī're). [L. *dexter,* right-handed; *gyrus,* a circle.]=Polarization to the right.

Dextrorsal, (deks-tror'sal). [L. *dexter,* right-handed.]=Right-handed: used of a spiral, or of rotation.

Dextrose, (deks'trōs). [L. *dexter,* to the right hand.]=$C_6H_{12}O_6.H_2O$=Starch sugar=Grape sugar; obtained from dried fruits and starch; a compound of starch and water.

Dhourra, (dō'ra)=Holcus Arundinaceus: a grass plant, very easily cultivated, which yields a very large return.

Di, (dī). [Gk. *dis,* twice.] A prefix meaning two or twice.

Diabetic sugar, (dī-a-bē'tik). [Gk. *diabaino,* I go through.]=$C_6H_{12}O_6.2H_2O$: grape sugar found in urine in the disease called diabetes, and causing right-handed rotation in polarised light.

Diadelphia, (dī-a-delf'i-a). [Gk. *dis,* twice; *adelphos,* brother.] A sub-division of plants in the Linnæan system, containing those, chiefly leguminous, which have the stamens in two bundles.

Diadelphous, (dī-a-del'fus). [Diadelphia, *q.v.*] Having the stamens in two bundles.

Diadem lemur. A lemur belonging to Indrisinæ, *q.v.*

Diagonal, (dī-ag'o-nal). [Gk. *dia,* through; *gonia,* corner.] A straight line joining the opposite angles of a parallelogram.


Diagonal.

Diagram, (dī'a-gram). [Gk. *diagrapho,* I describe.] A drawing in outline. *D. of a flower:* a horizontal section, showing the respective positions of its various parts as seen from above.

Dial telegraphs, by which signals are expressed by the movements of a hand upon a dial-plate.

Diallage, (dī'al-āj). [Gk. *diallasso,* I exchange.] A compound of silica with lime and magnesia, a variety of pyroxene, frequently found in volcanic rocks; named from its colour not being always the same.

Diallogite, (dī-al'lō-jīt). [Diallage, *q.v.*] A metallic mineral, crystallising in hexagons, chiefly carbonate of magnesia; belongs to the manganese group.

Di-allyl, (dī'al lil). [*Di* and *allyl, q.v.*]=$(C_3H_5)_2$: the hydrocarbon of the allylic series; a volatile liquid, the vapour of which is combustible.

Dialuric acid, (dī-a-lū'rik)=$C_4H_4N_2O_4$: an acid obtained from alloxan; also called hydride of alloxan.

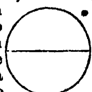
Dialypetalæ, (dī-al-i-pet'a-lē). [Gk. *dialysis,* separation; petal, *q.v.*] Brongniart's term for a division of Exogens belonging to Angiospermeæ, having flowers in which the petals, if there be any, are free from each other.

Dialyser, (dī-a-lī'zer). [Gk. *dialysis,* loosening.] A vessel closed below by a porous membrane, through which dialysis takes place.

Dialysis, (dī-al'i-sis). [Gk. *dialysis,* loosening.] The separation of crystalloid and colloid bodies by means of a membrane, through which they pass in unequal degrees.

Diamagnetism, (dī-a-mag'net-izm). [Gk. *dia,* through; Magnetism, *q.v.*]=Repulsion of substances, such as bismuth and antimony, by magnets.

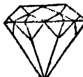
Diameter, (dī-am'e-ter). [*Diametros,* the Greek word.] A straight line drawn through the centre of a circle to meet the circumference on each side: generally a straight line drawn through the middle of a figure, and so dividing it into equal parts.


Diameter.

Diamides, (dī'a-mīdz). [Gk. *dis,* twice; Amide, *q.v.*] Compounds formed by two, four, or six atoms of hydrogen in two molecules of ammonia, being replaced by a dibasic electro-negative radicle. *Primary D.,* in which two atoms are so replaced. *Secondary D.,* in which four atoms are so replaced; these include the imides and ureides. *Tertiary D.,* in which all the hydrogen is replaced.

Diammonias, (dī-am-mō'ni-az). [Gk. *dis,* twice; Ammonia, *q.v.*]=Diatomic bases=Diamines: bases formed from diatomic alcohols by replacing two, four, or six atoms of hydrogen by a dyad hydrocarbon radicle.

Diamond, (dī'a-mond). [*Diamant,* the French word.] Pure crystalline carbon, the hardest substance known, possessing great lustre owing to its great refracting power.


Diamond. (Brilliant.)

Diamyl, (dī'a-mil). [Gk. *dis,* twice; Amyl, *q.v.*]=$(C_5H_{11})_2$=Amyl=Amylamylide: a colourless aromatic liquid; a hydrocarbon, obtained during the distillation of coal; the molecular formula of amyl.

Diamylene, (dī-am′i-lēn) [Gk. *dis*, twice; Amylene, *q.v.*]$=(C_5H_{10})_2$: used for two equivalents of amylene, as in diamylene oxide$=C_{10}H_{20}O$.

Diana monkey=Cercopithecus sp.: has a white crescentic band on the forehead.

Dianchora, (dī-ang′ko-ra). A fossil belonging to Lamellibranchiata.

Diandria, (dī-an′dri-a). [Gk. *dis*, twice; *aner*, man.] A sub-division of plants according to the Linnæan system, including those having two distinct stamens.

Dianilides, (dī-an′i-līdz). [Gk. *dis*, twice; Anilide, *q.v.*] Derivatives of aniline, containing two equivalents of aniline.

Dianthus, (di-an′thus). [Gk. *dios*, the god; *anthos*, flower, called Jupiter's flower.]=Pink, carnation, &c., an herb belonging to Carophyllaceæ.

Diapason, (dī-a-pā′zon). [Gk. *dia*, through; *pas*, the whole.]=Octave: all the notes included in an octave; also used generally, as including all of any given set of notes

Diapensiaceæ, (dī-a-pen-si-ā′se-ē)=Diapensiads: prostrate shrubs, with terminal flowers, belonging to Gentianales.

Diaphaneity, (dī-a-fa-ne′i-ti). [Gk. *dia*, through; *phainein*, to show.] The property of being transparent or diaphanous

Diaphanous, (dī-af′a-nus), [Gk. *dia*, through; *phaino*, I show.]=Transparent: permitting the passage of light so perfectly that objects can be clearly distinguished.

Diaphragm, (dī′a-fram). [Gk. *diaphragma*, partition]=Phren· a muscular partition between the thorax and abdomen of man, the contraction of which is essential to breathing; found also in all mammals, and, more or less modified, in most Vertebrata, but not in invertebrate animals. *D shell*: divided in two by a diaphragm; the larger part being filled with bullets, the smaller with powder.

Diaphysis, (dī-af′is-is). [Gk. *dia*, through; *physis*, growth] The centre of ossification of the shaft of a long bone.

Diapophyses, (dī-a-pof′i-sēz). [Gk. *dia*, through; *apophysis*, branch.] Tubercular transverse processes in the vertebræ.

Diaspore, (dī′a-spor). [Gk. *diaspora*, dispersion.]$=Al_2O_3H_2O$· a mineral, chiefly hydrate of alumina; named from breaking into small pieces when heated.

Diastase, (dī′a-stās). [Gk. *diastasis*, separation.] An albuminous substance which converts starch into sugar during the germination of seeds.

Diastema, (dī-a-stē′ma). [Gk. *diastemi*, I separate.] A space, especially between the canine and other teeth, found in most mammals, but not in man.

Diastole, (dī-a-stō′lē). [Gk. *diastello*, I send apart.] The dilation of a ventricle or auricle of the heart. *cf.* Systole.

Diastopora, (di-as-to-pō′ra). A Bryozoan animal, known only by fossil remains in Oolite rocks.

Diastylidæ, (dī-a-stī-li-dē)=Cumaceæ: small crustacean animals belonging to Podophthalmia.

Diathermancy, (dī-a-ther′man-si). [Gk. *dia*, through; *therme*, heat.] The property of allowing the passage of heat, *i.e.*, of transmitting radiant heat.

Diathermic, (dī-a-ther′mik). [Gk. *dia*, through; *therme*, heat.] Allowing heat to pass through.

Diathermometer, (dī-a-ther-mom′e-ter). [Gk. *dia*, through; Thermometer, *q.v.*] An instrument for measuring the thermal resistance of any given substance by noting the amount of heat transmitted by it.

Diatomaceæ, (dī-a-to-mā′se-ē). [Gk. *diatemno*, I cut through.]=Brittle-worts: slimy, crystalline, microscopic bodies, which multiply by fission, found in damp places and at the bottom of deep seas, belonging to Algales; also called Splitters. The term is also applied to the silicious coverings of these plants.

Diatomic, (dī-a-tom′ik). [Gk. *dis*, twice; Atomic, *q.v.*]=Dyadic: used of an atom or a molecule which can combine with or replace two monatomic equivalents.

Diatoms, (dī-a-tomz)=Diatomaceæ, *q.v.*

Diatonic scale, (dī-a-ton′ik). [Gk. *dia*, through] From any note to its octave, above or below; eight notes having their rates of vibration in the ratio of 24, 27, 30, 32, 36, 40, 45, 48.

Dibasic. Having two atoms of replaceable hydrogen in each molecule.

Dibenzoyl, (dī-ben′zoil). [Gk. *dis*, twice; Benzoyl, *q.v.*]$=(C_7H_5O)_2$: the radicle of the benzoic series, a crystalline substance; the molecular form of benzoyl.

Dibenzyl, (dī-ben′zil). [Di and Benzyl, *q.v.*]$=(C_7H_7)_2$: the radicle of the benzyl series, a crystalline substance, the molecular formula of benzyl.

Dibenzylia, (dī-ben-zil′i-a). [Di and Benzyl, *q.v.*]$=(C_7H_7)_2HN$: an aniline base, usually in the liquid form; ammonia in which two equivalents of hydrogen are replaced by two of benzyl.

Dibranchiata, (dī-brang-ki-ā′ta). [Di, *q.v.*; *bragchia*, gills.]=Cuttle-fishes, &c.: a division of Cephalopoda, including all the more highly organised mollusca of that class, that have not more than ten arms, on which are suckers; only two gills, and an ink-bag.

Dibutyl, (dī-bū′til). [Di and Butyl, *q.v.*]$=(C_4H_9)_2$=Octane=Valyl: a hydrocarbon obtained in the distillation of coal; the molecular formula of butyl.

Dibutyril, (dī-bū′ti-ril). [Di and Butyril.]$=(C_4H_7O)_2$=the molecular form of butyril.

Diceras, (dī′se-ras). [Gk. *dis*, two: *keras*, horn.] A horn-like Lamellibranchiate animal, known only by fossil remains in Coral Rag.

Dichlamydeæ, (dī-klam-id′e-ē). [Di, *q.v.*: Gk. *chlamys*, cloak.] Plants the flowers of which have both calyx and corolla. *cf.* Achlamydeæ.

Dichlorides, (dī-klō′rīdz). [Di and Chloride, *q.v.*] Compounds of one atom of an element, with two atoms of chlorine, such as baric and calcic chlorides, all of which are usually solid. The molecule of a dichloride contains two atoms of chlorine, united with a positive or basic radicle.

Dichlorinated ether, (dī-klō-ri-nā'ted)=$(C_2H_3Cl_2)_2O$=Ether in which two atoms of hydrogen are displaced by chlorine; a heavy, oily, neutral liquid.

Dichlorisatin, (dī-klō-ris'a-tin). [*Di, chlorine*, and *isatin*, *q.v.*]=$C_8H_3Cl_2NO_2$: isatin in which two atoms of hydrogen are replaced by chlorine.

Dichobune, (dik'-o-būn). [Gk. *dicha*, in two; *bounos*, ridge.] A terrestrial quadruped, somewhat resembling the hare, remains of which are found in Eocene and Miocene strata, having the upper molar teeth deeply cut; originally described as belonging to Anoplotherium.

Dichodon. (dik'o-don). [Gk. *dicha*, in two; *odous*, tooth.] A hoofed quadruped, remains of which are found in Eocene strata, connecting the Anoplotherium with Ruminantia

Dichogamous, (dik-og'a-mus). [Dichogamy, *q.v.*] Male and female organs not mature at same time.

Dichogamy, (dik-og'a-mi). [Gk. *dicha*, in two; *gamos*, marriage.] Male and female flowers mature at different times, as in some ferns and angiosperms.

Dichotomies, (dī-kot'o-mēz). [Dichotomy, *q.v.*] Branch-systems formed by dichotomy.

Dichotomy. (dī-kot'o-mi). [Gk. *dicha*, in two; *temno*, I cut.] Division by continual bifurcation; common in ferns, but rare in phanerogamous plants.

Dichroism, (dī'krō-izm). [Gk. *dichromos*, two-coloured.] Having different colours when seen in different directions.

Dichroite, (dik-rō'it). [Gk. *dichromos*, two-coloured.] A mineral, chiefly silicate of alumina.

Diclines, (di-klī'nēz). [Gk. *dis*, twice; *kline*, couch.] Jussieu's term for plants which have separate male and female flowers.

Diclinous, (di-klī'nus). [Gk. *dis*, twice; *kline*, couch.]=Unisexual: having the male and female organs on separate flowers.

Dicotyledons, (dī-kot-i-lē'donz). [Di, *q.v.*: Gk. *kotyledon*, seed-leaf.]=Exogens: plants with pithy stems, separable bark, net-veined leaves, perianth usually in four or five parts, and embryo having two seed-leaves.

Dicotyledenous, (dī-kot-i-led'o-nous). [Dicotyledons, *q.v.*] Related to dicotyledons.

Dicotyles=Peccaries.

Dicrotism, (dī'kro-tizm). [Gk. *dis*, twice; *kroteo*, I beat.] A double beating of the arterial pulse.

Dictamnus, (dik-tam'nus). A plant, which has an inflammable emanation, belonging to Rutaceæ.

Dictyogens, (dik'ti-o-jens). [Gk. *diktyon*, net; *gennao*, I produce.] Plants intermediate between Endogens and Exogens.

Dictyotoptera, (dik-ti-o-top'ter-a). [Gk. *diktyotos*, veined; *pteron*, wing.]=Cockroaches: a name proposed by which to separate them from Orthoptera.

Dictyoxylon, (dik-ti-oks'i-lon). [Gk. *diktyon*, net; *xylon*, wood.] Fossil coal-plants, the wood of which has reticulated fibres.

Dicumyl, (dī-kū'mil). [Di and Cumyl, *q.v.*] $(C_{10}H_{11}O)_2$: the molecular form of cumyl, *q.v.*: a viscous oily substance.

Dicynodon, (di-sī'no-don). [Gk. *di*, two; *kyon*, dog; *odous*, tooth.] A fossil reptile found in Trias rocks. Has two tusks, teeth, and also a horny beak to the jaws

Dicynodontia, (dis-i-nō-don'shi-a). [Gk. *di*, two; *kyon*, dog; *odous*, tooth.] Including the Dicynodon and Oudenodon extinct reptiles of the Triassic age, having two canine teeth, found only in South Africa.

Didelphia, (dī-del'fi-a). [Didelphis, *q.v.*] One of the primary divisions of Mammalia, *q.v.*=Marsupialia, mostly Australian.

Didelphidæ, (dī-delf'i-dē). [Didelphis, *q.v.*] =Opossums; a family of American Marsupialia, of which Didelphis is the type

Didelphis, (dī-del'fis). [Gk. *dis*, two, *delphys*, womb.]=Opossum: a marsupial animal, now found only in America, the type of Didelphidæ.

Didine, (dī'dīn). [Didus, *q.v.*]=Dodo-like: related to the Dodo.

Didunculus, (di-dunk'u-lus). [Diminutive of Didus, *q.v.*] *D. strigirostris*=Tooth-billed pigeon of Navigator's Island, now probably extinct, allied to the Dodo.

Didus, (dīd'us). [The Latin name.]=Dodo, *q.v.*: a large pigeon-like bird, extinct since the end of the 16th century.

Didymium, (dī-dim'i-um) [Gk. *didymos*, twin.] 1.=Di: one of the earth-metals, very rare, and closely resembling Lanthanum, whence the name. 2. A small fungus with double peridium.

Didymocarpus, (dī-di-mō-kär'pus). [Gk. *didymos*, twin; *karpos*, fruit.] A plant belonging to Gesneraceæ, named from its twin-like capsules.

Didymograpsus, (dī-dim-ō-grap'sus). [Gk. *didymos*, twin, Grapsus]=Double graptolite: a Silurian zoophyte.

Didymous, (did'i-mus). [Gk. *didymos*, twin.] =In pairs.

Didynamia, (dī-di-nā'mi-a). [Gk *dis*, twice; *dynamis*, power.] A sub-division in the Linnæan system of botany, including plants having 4 stamens, two long and two short, with one pistil.

Didynamous, (dī-din'a-mus). [Didynamia, *q.v.*] Having four stamens, two long and two short.

Dielectrics, (dī-o-lek'triks). [Gk. *dia*, through; Electric, *q.v.*]=Non-conductors of electricity: glass, air, sulphur, &c.; substances which have but a small power of transmitting electricity by conduction, but are capable of being polarised, and so acting by induction.

Diethyl, (dī-eth'il). [Di and Ethyl, *q.v.*]= $(C_2H_5)_2$=Ethyl ethylide=Ethyl=Butyl hydride: a gaseous hydrocarbon, the molecular formula of ethyl, *q.v.* *D. carbonate*= Carbonic ether, *q.v.*

Diethylenia, (dī-eth-ī-lē'ni-a). [Di and Ethylenia, *q.v.*] = $(C_2H_4)_2H_2N_2$ = Acetylia=Diethylene diamine: an oily, odorous, inflammable liquid. *cf.* Ethylenia.

Diethylia, (dī-eth-ī'li-a). [Di and Ethylia, *q.v.*]=$(C_2H_5)_2HN$: a caustic, inflammable,

alkaline liquid=Ammonia, in which two equivalents of hydrogen are replaced by two of ethyl.

Diethylin, (dī-eth'i-lin). [Di and Ethylin, *q.v.*] = $C_3H_5(C_2H_5)_2HO_3$: a limpid odoriferous oil, being a compound of glycerin and ethyl.

Difference tones=Tartini's tones: a third tone produced when two different musical notes are sounded, the rate of vibration of which is equal to the difference of the rates of the primary tones.

Differential, (dif-fer-en'shi-al). [L. *differo*, I separate.] *D. calculus*: the calculation of infinitely small differences. *D coefficient:* the limit of the ratio of two variable quantities when they become indefinitely small, written $\frac{dx}{dy}$ for the 1st term, $\frac{d^2x}{dy^2}$ the 2nd, &c. *D. equation:* an equation containing differential coefficients. *D. screw:* two screws of different threads, mounted so that when once turned the force acts through a space equal to the difference of to threads. *D. thermometer:* for measuring differences of temperatures at the same time. *D. tone:* difference tones, *q.v.* *D. worm-wheel:* a cog-wheel working with a screw on a shaft.

Differentiation, (dif-fer-en-shi-ā'shun). [L. *differo*, I separate.] 1. The separation into classes according to some specific difference of structure or nature. 2. The development of two objects, apparently alike, in different directions. 3 The process of obtaining the differential co-efficient of a function with respect to a variable.

Difflugia, (dif-flū'ji-a). A rhizopod in a membraneous sac.

Diffraction, (dif-frak'shun). [L. *diffringo*, I break in pieces.] The breaking of a ray of light, heat, or sound into smaller rays. *D. of light*=Inflexion of light: the formation of coloured fringes when part of a small ray of white light is intercepted by any opaque body; if the light be of one colour only, the fringes are alternately of that colour and of darkness. *D. gratings:* a number of parallel lines very close together, which, when light falls on them, produce the colours of the spectrum by diffraction.

Digastric muscle, (dī-gas'trik). [Gk. *dis*, twice; *gaster*, belly.] Connecting the mastoid and mandibles, and having a central tendon separating two muscular portions called bellies.

Digester, (di-jes'ter). [L. *digero*, I set in order.] An apparatus for raising water to high temperatures by preventing the escape of the steam.

Digestion, (di-jest'yun). [L. *digero*, I set in order.] 1. The treatment of any substance in a digester. 2. The conversion of food into chyme, which takes place in the stomach.

Digestive, (di-jes'tiv). [Digestion, *q.v.*] *D. system:* all the organs used in the assimilation of food. In Vertebrata: mouth, stomach, intestines, &c.; in lower animals it is less complex, and in the lowest very simple. *D. animals*=Radiata: term used by Oken for the lower animals whose chief characteristic is the absorption of food.

Diggers. Insects belonging to Hymenoptera.

Digitalis, (dij-it-ā'lis). [L. *digitalis*, belonging to the finger.] = Foxglove: an herb with spotted flowers, belonging to Scrophulariaceæ.

Digitate, (dij'i-tāt). [L. *digitatus*, having fingers.] Used of leaves, &c., resembling in form the fingers of a hand.

Digitigrada, (dij-it-i-grā'da). [L. *digitus*, finger; *gradior*, I walk] Mammalia which walk on the phalanges or toes, such as the dog, cat, lion, &c.

Digits, (dij'its). [L. *digitus*, a finger.]=The fingers.

Diglycolic acid, (dī-glī-kol'ik). [Di and Glycolic, *q.v.*] $C_4H_6O_5$=Oxidised glycol: a liquid resembling lactic acid.

Digynia, (dī-jin'i-a). [Gk. *dis*, twice; *gynia*, woman.] A sub-division of plants, in the classification by Linnæus, including all those that have two styles.

Digynous, (dij'i-nus). [Digynia, *q.v.*] Having two styles.

Dihexyl, (dī-heks'il). [Di and Hexyl, *q.v.*]= Caproyl=Dodecane=$(C_6H_{13})_2$: an aromatic liquid, the radicle of caproic acid.

Dihydric, (dī-hī'drik). [Di and Hydric, *q.v.*] Containing two equivalents of hydrogen. *D. sulphide*=Sulphuretted hydrogen. *D. sulphate*=Sulphuric acid.

Dikakodyl, (dī-kak'o-dil). [Di and Kakodyl, *q.v.*]=Kakodyl kakodylide=Kd_2: the molecular form of kakodyl, *q.v.*

Dikes, (dīks) [A.-S. *dic*, ditch.] 1. Perpendicular walls of trappean rock forced up by volcanic action so as to penetrate softer rocks. 2. Low hills formed by art to keep the water from overflowing land beneath the sea-level.

Dilactic acid, (dī-lak'tik). [Di and Lactic, *q.v.*]=$C_6H_{10}O_5$: formerly called lactic anhydride, a bitter yellow substance obtained by heating lactic acid.

Dill, (dil)=Anethum graveolens; a plant belonging to Apiaceæ.

Dilleniaceæ, (dil-len-i-ā'se-ē). [J. J. Dillenius, a botanist.]=Dilleniads: trees and shrubs, chiefly tropical, with leathery leaves and solitary flowers, belonging to Ranales.

Dillesh, (dil'lesh). An edible sea-weed, found on the coast of Ireland.

Diluvium, (dī-lū'vi-um). [L. *diluvium*, a flood.] An old name for boulder formation, *q.v.*

Dimeracanthus, (di-mer-a-kan'thus). [Gk. *di*, two; *meris*, cleft; *akantha*, spine.] A plagiostomous fish, known only by fossil spines, found in Devonian rocks.

Dimethyl, (dī-meth'il). [Di and Methyl, *q.v.*] =$(CH_3)_2$= Methyl methylide = Ethyl hydride: a combustible gas, the molecular form of methyl, *q.v.*

Dimethylia, (dī-meth-ī'li-a). (Di and Methylia, *q.v.*]=$(CH_3)_2HN$: a base obtained by compounding acetic aldehyd and ammonia =Ammonia in which two equivalents of hydrogen are replaced by two of methyl.

Dimidiate, (di-mid'i-āt). [L. *demidius*, half.] =Halved.

Dimocarpus. A plant having edible pulpy fruit, with leathery coat, found in China. *D. litchi* = Litchi. *D. longan* = Longan. Included in Euphoria, *q.v.*

Dimorphism, (dī-morf'izm). [Gk. *dis*, twice; *morphe*, form.] 1. Crystallization of the same substance in two different forms, as in sulphur, carbon, palladium. 2.=Heterostylism. 3. Two forms of flowers, one brighter than the other. 4. Generally, any double form.

Dimorphodon, (dī-morf'o-don). [Gk. *dis*, twice; *morphe*, form; *odous*, tooth.] An extinct reptile, belonging to Pterosauria, having both large and small teeth.

Dimyaria, (dī-mi-ā'ri-a). [Gk. *dis*, twice; *myon*, muscle.] Acephalous mollusca: having two impressions of muscles in each valve, having two adductor muscles. A sub-division of Lamellibranchiata.

Dinaphthyl, (dī-naf'thil). [Di and Naphthyl, *q.v.*] $(C_{10}H_7)_2$: the molecular form of naphthyl, *q.v.*

Dinas bricks, (din'as). [D in S. Wales] Fire-bricks made of a silicious earth found near Dinas.

Dingo, (din'go)=Australian dog=Canis dingo.

Dinoceras, (di-nos'e-ras). [Gk. *deinos*, terrible; *keras*, horn.] The type of Dinocerata, *q.v.*

Dinocerata, (dī-nō-ser-ā'ta). [Dinoceras, the typical genus.] Ruminant quadrupeds known only by fossil remains found in American Eocene rocks.

Dinophis, (dī-nō'fis). [Gk. *deinos*, terrible; *ophis*, snake.] A snake, known only by fossil remains, found in Tertiary rocks.

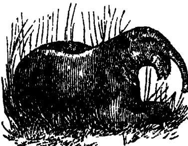
Dinoponera. *D. grandis*: a stinging ant of Brazil, 1¼ in. long.

Dinornis, (dī-nor'nis). [Gk. *deinos*, terrible; *ornis*, bird.] A large struthious bird of New Zealand, recently extinct.

Dinosauria, (dī-nō-saw'ri-a). [Gk. *deinos*, terrible; *saura*, lizard.] Extinct reptiles, including the Iguanodon and Megalosaurus, of which some approximate to birds in structure: so highly organised as to approximate to Mammalia. Form a link between reptiles and birds.

Dinotheres, (dī-nō-thē'rēz). [Dinotherium, *q.v.*]=Dinotheria: plural of Dinotherium, *q.v.*

Dinotherium, (dī-nō-thē'ri-um). [Gk. *deinos*, terrible; *therion*, beast.] An extinct elephant-like animal, remains of which are found in Miocene strata.


Dinotherium.

Diodon, (dī'o-don). [Gk. *dis*, twice; *odous*, tooth]=Sun-fish: a fish belonging to Teleostei, named from the sharp edge of its jaws, has a very distensible skin, which it inflates for floating.

Diœcious, (dī-ē'si-us). [Gk. *dis*, double; *oikos*, house.] Plants having male and female flowers on different individuals; usually have nectaries, and are impregnated by insects.

Diœcia, (dī-ē'si-a). [Gk. *dis*, double; *oikos*, house.] A class in the Linnæan system of botany, including diœcious plants.

Dionæa, (dī-ō-nē'a). [Dione, *q.v.*] A plant belonging to Droseraceæ. *D. muscipula*= Catchfly=Venus's fly-trap.

Dione, (dī-ō'ne). [Classical.] A star.

Dionysian period, (dī-o-nish'i-an). [Dionysius, *q.v.*] = 19×28 = 532 years = Lunar cycle × Solar cycle: at the end of which the changes of the moon take place on the same day of the week and of the month.

Dionysius, (dī-o-nish'i-us). [Classical.] A crater in the moon.

Dioplodon, (dī-op'lo-don). [Gk. *dis*, twice; *hoplon*, weapon; *odous*, tooth.] A dolphin, known only by fossil remains, chiefly teeth, found in Miocene rocks.

Diopside, (dī-op'sīd). [Gk. *dia*, through; *opsis*, sight.] A light green transparent variety of pyroxene, chiefly silicate of magnesium and calcium.

Dioptase, (dī-op'tās). [Gk. *diopteuo*, I look through.]=Emerald copper: a silicate of copper.

Dioptric, (dī-op'trik). [Gk. *dia*, through; *opto*, I see.] *D. telescope*=Refracting telescope. *v.* Telescope. *D. lighthouse*: one in which the light is refracted.

Dioptrics, (dī-op'triks). [Dioptric, *q.v.*]= Anaclastics: the science of refraction of light.

Diorite, (dī'or-īt). A variety of greenstone; a compound of hornblende and felspar.

Dioscorea, (dī-os-kō'ro-a). [Dioscorides] *D. alata*=Winged-yam. *D. sativa*=Yam.

Dioscoreaceæ, (dī-os-ko-re-ā'se-ē) = Yams: tropical twining shrubs, with small flowers and sometimes edible tubers, belonging to Dictyogens.

Diospyros, (dī-os'pi-ros). [Gk. *dios*, divine; *pyros*, wheat or food.] A genus of plants, belonging to Ebenaceæ, chiefly tropical trees. *D. Ebenus*; ebony.

Diostea, (dī-os'te-a). [Gk. *dis*, double; *osteon*, bone.] A new genus of Verbenaceæ from Chili.

Diotis, (di-ō'tis). [Gk. *dis*, two; *ous*, ear.] = Cotton-weed: an herb, belonging to Asteraceæ, named from the lobes of the corolla being ear-shaped.

Dioxides, (dī-oks'īdz) [Di and Oxide, *q.v.*] =Binoxides=Deutoxides: compounds containing two equivalents of oxygen to one of another element, as SnO_2.

Dip, (dip). *D. of astronomical observation*: the correction required when the altitude of a celestial object is observed from a height h, such as a mountain=$\cdot 9752\sqrt{h}$ in minutes to be subtracted. *D. of magnetic needle*: the vertical angle which a freely suspended needle makes with the horizon. *D. of strata*: the inclination of strata to the horizon; resembling the slope of a house roof. *D. circle*: an instrument for measuring the magnetic dip.

Diphanite, (dif'a-nīt). A variety of margarite.

Diphenyl, (dī-fen'il). [Di and Phenyl, *q.v.*]=$(C_6H_5)_2$=Phenyl phenylide=Phenyl: a pearly, crystalline solid; the molecular form of phenyl, *q.v.*

Diphyes, (dī-fī'ēz). [Gk. *dis*, twice; *phyo*, I produce.] 1. A genus of sea-nettles, belonging to Hydrozoa, named from having a double structure. 2. A plant=Bolbophyllum adenopetalum.

Diphyodonts, (dī-fī'o-donts). [Gk. *dis*, twice; *phyo*, I produce; *odous*, tooth.]=Heterodonts: named from having two successive sets of teeth; includes all Mammalia, excepting Monotremata, Edentata, and Cetacea

Diplacanthus, (dip-la-kan'thus). [Gk. *diplax*, double; *akantha*, spine.] A fish, belonging to Acanthodii, known only by fossil remains in Old Red Sandstone.

Diplatinamine, (dī-plat'in-a-mīn).=$PtH_{12}N_4O_2$. *v.* Platinum bases.

Diplatosamine, (dī-plat'o-sa-mīn)=$PtH_{10}N_4.2H_2O$: Reiset's first base. *v.* Platinum bases.

Diplocidaris, (dip-lo-sid'a-ris). [Gk. *diploos*, double; *kidaris*, tiara.] A sea-urchin, having two rows of ambulacral pores.

Diploctenium. [Gk. *diploos*, double; *cteis*, comb] A coral found in Lower Chalk.

Diplodonta. [Gk. *diploos*, double; *odous*, tooth.] A fossil mollusc, resembling the cockle, found in Eocene rocks.

Diplograpsus, (dip-lo-grap'sus). [Gk. *diploos*, double, Grapsus.]=Double graptolites: those having two rows of cells, found in Llandeilo flags

Diplopoda, (dī-plop'o-da). [Gk. *diploos*, double; *pous*, foot.]=Chilognatha: animals belonging to Myriapoda, in which each somite of the body has two pairs of legs.

Diploptera, (dī-plop'ter-a). [Gk. *diploos*, double or folded; *pteron*, wing.] Wasps, hive-bees, &c.; insects belonging to Hymenoptera; named from

Diplopterus, (dī-plop'ter-us) [Gk. *diploos*, double; *pteryx*, fin.] A fish, known only by fossil remains.

Diplopy, (dī'plo-pi). [Gk. *diploos*, double; *ops*, eye.] A diseased condition of the eyes, which causes double images of objects to be seen

Diplotaxis, (dip-lo-taks'is). [Gk. *diploos*, double; *taxis*, order.]=Rocket=An herb with yellow flowers, belonging to Brassicaceæ, named from its seeds being in two rows.

Dipnoa, (dip'no-a). [Gk. *dis*, double: *pnoe*, breath.] Used by Owen for a division of reptiles, including Batrachia and other water-breathing reptiles.

Dipnoi, (dip'noi). [Gk. *dis*, twice; *pnoe*, breath.]=Double breathers: fishes, such as the mud-fish, which connect fishes with reptiles; also called Diplopnoi and Protopteri.

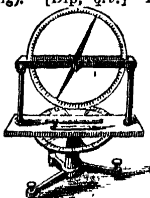
Dipoda, (dī'pod-a). [Gk *dis*, twice, *pous*, foot.] Aristotle's name for Bimana

Dipodidæ, (dī-pod'i-dē). [Dipus, *q.v.*]=Jerboas: small animals belonging to Rodentia, having long hind legs.

Dipotassic, (dī-pot-as'sik) [Di and Potassic, *q.v.*] *v.* Potassic.

Dippel's oil=Bone-oil, *q.v.*

Dipping needle, (dip'ping). [Dip, *q.v.*] A magnetised needle, or small compass, suspended by its centre so as to move freely in a vertical plane, when it points directly to the N. or S magnetic pole, whichever be the nearest, thus marking the dip of the place where it is suspended.


Dipping-needle.

Dipriacanthus, (dī-pri-a-kan'thus). [Gk. *dis*, twice; *prisis*, saw; *akantha*, spine.] A plagiostomous fish, known only by fossil spines; found in Coal formation.

Dipropyl, (dī'pro-pil)=$(C_3H_7)_2$=Ditrityl: a hydrocarbon obtained from the distillation of cannel coal. The molecular form of propyl, *q.v.*

Diprotodon, (dī-pro'to-don). [Gk. *dis*, twice; *pro*, in front, *odous*, tooth.] A very large kangaroo, known only by fossil skull and bones, found in Upper Pliocene rocks, in Australia.

Dipsacaceæ, (dip-sa-kā'se-ē). [Dipsacus, *q.v.*]=Teazle-worts: herbs and shrubs, with capitate flowers and tubular corollas, belonging to Campanales.

Dipsacus, (dip'sa-kus). [Gk. *dipsao*, I thirst.]=Teazel: an herb, the type of the order Dipsacaceæ; named from the leaves holding water.

Diptera, (dip'ter-a). [Gk. *dis*, twice; *pteron*, wing.]=Flies, fleas, and gnats; insects having only two wings. Fleas, though having no wings, are sometimes considered to belong to this order.

Dipteraceæ, (dip'ter-ā'se-ē). [Dipterocarpus, the typical genus.]=Dipterads: large East Indian resinous trees, with large flowers, belonging to Guttiferales; named from the form of its calyx.

Dipterix, (dip'ter-iks). [Gk. *dis*, twice; *pteryx*, wing.] Named from shape of calyx: a tree belonging to Fabaceæ. *D. odorato*=Jonka bean; also called Tongo or Tonquin bean.

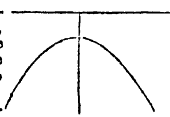
Dipterus, (dip'ter-us). [Gk. *dis*, twice; *pteryx*, fin.] A ganoid fish, known by fossil remains found in Old Red Sandstone.

Dipus, (dī'pus). [Gk. *dis*, twice; *pous*, foot.]=Jerboa, Gerbillus, &c=Jumping mice: small quadrupeds, forming a division of Muridæ, having long hind legs, and living on grain, &c., in fields.

Dipyre, (dī'pīr). [Gk. *dis*, twice; *pyr*, fire.] A silicated mineral.

Direction angle, (dī-rek'shun). [L. *dirigo*, I set straight.] The angle formed by the lines of action of two forces.

Directrix, (dī-rekt'-riks). [L. *directus*, straight.] A straight line at right angles to the axis of a conic


Directrix.

section, which serves to determine the curve of the figure.

Dirt-bed. A thin bed of vegetable soil, containing roots of trees, &c., in Lower Purbeck strata.

Disaster, (dis-as'ter). [Gk. *dis*, twice; *aster*, star.] A sea-urchin found fossil in Lower Oolite rocks.

Disc, (disk). [L. *discus*, quoit.] Used generally for any small, flat, circular surface. *D. and roller:* a small roller revolving on an axis upon the surface of a disc; used to communicate motion from one to the other.

Discharge. *D. of electricity*, from an electrified surface: may be converted into light, motion, magnetism, or chemical action, the electrified surface being restored to a neutral condition.

Discharger. An apparatus for restoring any electrified surface to its neutral condition.

Disciform, (dis'si-form). [Disc and form.]=Discoid, *q.v.*

Discina, (dis'si-na). A genus of Brachiopoda; a mollusc found in the oldest geological strata, and still extant.

Discinidæ, (dis-sin'i-dē). [Discina, *q.v.*] A division of Brachiopoda, the type of which is the discina.

Discoboli, (dis-kob'o-li). A family of fishes.

Discoid, (dis'koid). [Disc, *q.v.*; Gk *eidos*, form.]=Disc-like: having nearly the form of a disc.

Discoidal, (dis-koid'al). [Discoid, *q.v.*] *D. placenta:* found in man, apes, bats, &c. *D. shells:* univalve shells coiled in one plane.

Discomycetes, (dis-ko-mi-sē'tēz). [Disc, *q.v.*; Gk. *mykes*, mushroom.] Morells, &c., fungi, forming a division of Ascomycetes, either pileate or cup shaped, of fleshy substance.

Discontinuous gemmation. *v.* Gemmation.

Discophora, (dis-kof'o-ra). [Gk. *diskos*, disc; *phero*, I carry.] 1=Acalaphæ, *q.v.*=Medusæ: a primary division of Hydrozoa. 2. Suctoria=Leeches, *q.v.*: a division of Annelida, having sucking discs. 3. Hirudinea, *q.v.*

Discophoræ, (dis-kof'o-rē). [Discophora, *q.v.*] A sub-division of Tetracyclæ.

Discord, (dis'koid). [*Discordia*, the Latin word.]=Dissonance, *q.v.*

Disinfection, (dis-in-fek'shun). [L. *dis*, from; infection, *q.v.*] The removal of putrefying matter.

Disintegration, (dis-in-tē-grā'shun). [L. *dis*, from; *integer*, whole.] To break up into component particles; especially used of the wearing away of rocks by the action of water, air, &c.

Disodic, (di-sō'dik). [Di and Sodic, *q.v.*] *v.* Sodic.

Dispersion, (dis-per'shun). [L. *dispergo*, I scatter.] *D. of light*=Decomposition of light: the separation and dispersion, so as to form a spectrum, of the various coloured rays of which white light is said to be composed.

Displacement, (dis-plās'ment). 1. Quantity of water displaced by a ship. 2. A gas is collected by displacement when it is passed into a vessel containing only air; if heavier than air it is passed down, if lighter than air it is passed up, into the vessel, when the air is displaced by the gas.

Dissepiments, (dis-sep'i-ments). [L. *dissepio*, I separate.]=Partition plates dividing the cells of a compound ovary.

Dissociation, (dis-sō-si-ā'shun). [L. *dissocio*, I separate.] Partial decomposition of chemical compounds by means of heat; as of carbonic anhydride into carbonic oxide and oxygen.

Dissonance, (dis'sō-nans). [L. *dissonus*, discordant.]=Discord: caused when the difference of vibrations in two musical sounds is greater than 6, but less than 132 per second, at a maximum when this equals 33 per second.

Distal, (dis'tal). The term used for the more quickly growing end of a hydrosoma; the end which usually has the mouth.

Distance, (dis'tans) [L. *distantia*, distance.] *Angular D.:* the distance round the circumference of a circle that any object has moved or appeared to move.

Disthene, (dis'thēn)=Cyanite=$Al_2O_3SiO_2$: a crystalline form of silicate of alumina.

Distichous, (dis'ti-kus). [*Distichos*, the Greek word.] Two-rowed.

Distillation, (dis-til-lā'shun). [L. *destillo*, I distil.] The vaporization of a liquid by heat, and its recondensation by cold, usually for the purposes of purification.

Distoma, (dis'to-ma). A tunicated mollusc belonging to Botryllidæ, which has young by internal gemmation = King's yellow worm.

Disulphate. *v.* Sulphate.

Disulphide. *v.* Sulphide.

Ditartaric acid, (di-tar-tar'ik). [Di and Tartaric, *q.v.*]=$C_8H_{10}O_{11}$; obtained by heating tartaric acid.

Ditetryl, (di-tet'ril). [Di and Tetryl, *q.v.*]=Butyl=Valyl=$(C_4H_9)_2$: a hydrocarbon produced in the distillation of coal.

Ditrityl, (di-tri'til). [Di and Trityl.]=$(C_3H_7)_2$=Propyl=Dipropyl, *q.v.*

Diureides, (di-ū're-idz). [Di and Ureides.] Obtained from some organic acids by the action of urea; two equivalents of urea uniting with one of the acid.

Diurnal, (di-er'nal). [L. *dies*, day.] Daily. *D. flowers:* open in daytime.

Divers, (dī'verz). [A.-S. *dyfan*, to dive.]=Colymbidæ: aquatic birds with small wings. *Cartesian D.*, *v.* Cartesian.


Diver.

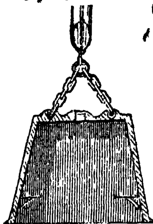
Divi-divi, (dī-vi-dī'vi).=Fruit of Cæsalpinia coriaria, used in dyeing and tanning.

Divalent, (dī'val-ent). [Gk. *dis*, twice, L. *valens*, strong.] = Bi-equivalent, *q.v.*

Diving, (dī'ving). [Diver, *D. bell:* a hollow vessel, usually bell-shaped, used for working under water. *D.*

birds = Divers: usually lay one egg only.

Dobereiner's lamp. In which hydrogen is burnt by being caused to pass over spongy platinum.


Diving-bell

Dock, (dok). [*Docce*, the A.-S. name.]=Rumex, a common herb belonging to Polygonaceæ.

Doctor, (dok'tor).=Acanthurus, *q.v.* = Lancet fish: a fish having sharp-edged spines near the tail.

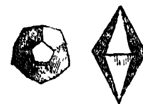
Dodder, (dod'der). [The Danish name.]=Cuscuta: a twining parasitic plant without leaves, the type of Cuscutaceæ.

Dodders, (dod'derz). [Dodder, *q.v.*]=Cuscutaceæ; dodder-like plants belonging to Solanales.

Dodder laurels=Cassythaceæ, *q v.*

Dodecagon, (dō-dek'a-gon). [Gk. *dodeka*, twelve; *gonia*, corner.] A regular polygon, having twelve equal sides.

Dodecahedron, (dō-dek-a-hed'ron). [Gk. *dodeka*, twelve; *hedra*, base.] A regular solid figure having twelve equal sides.


Dodecahedrons

Dodecandria, (dō-de-kan'dri-a). [Gk. *dodeka*, twelve; *aner*, man.] A class of plants in the Linnæan system; including those having from 11 to 19 stamens.

Dodecandrous, (dō-de kan'drus). [Dodecandria, *q v.*] Having 12 stamens.

Dodecane, (dō'de-kān)=$C_{12}H_{26}$: a hydrocarbon, also called Dihexyl.

Dodo, (dō'dō). [*Doudo*, the Portuguese name] =Aphanapteryx bræckii = Didus ineptus: a large ground pigeon with short wings, found alive in Mauritius till about 1700.


Dodo.

Dog, (dog). [*Doggr*, the Icelandic name.]= Canis: a domesticated carnivorous quadruped, resembling the wolf, of which it is probably a variety. *D. lichen*=Peltidea canina. *D. banes* = *D. worts* = Apocynaceæ: plants with poisonous sap. *D. fish*=Squalus spinax: a shark-like fish, belonging to Plagiostomi. *D.-headed monkey*=Baboon, *q.v.* *D.-mercury*=Mercurialis, *q.v.* *D. rose*=Rosa canina. *D. star*=Sirius: a star of the first magnitude in Canis Major. *D. wood*=Wood of Rhamnus frangula, Cornus sanguinea, and Alnus glutinosa; used for gunpowder.

Dog-tooth spar. A variety of carbonate of lime, with small projections on the faces of the crystals.

Dog-of-the-marsh. A fossil fox-like animal found at Œningen, and bought by Sir R. Murchison for £30; now in the British Museum.

Dog's tooth violet=Erythronium dens-canis: a plant belonging to Liliaceæ.

Dolerite, (dol'-e-rīt). [Gk. *doleros*, deceitful.] A coarse variety of basalt, often mistaken for diorite.

Dolichocephali, (dol-i-kō-sef'a-li). (Gk. *dolichos*, long; *kephale*, head.] Term used by Retzius for long-headed people.

Dolichocephalic, (dol-i-kō-se-fal'ic). [Gk. *dolichos*, long; *kephale*, head.]=Long-headed.

Dolichocephaly, (dol-i-kō-sef'a-li). [Dolichocephalic, *q.v.*]=Long-headedness.

Dolichosaurus, (dol-i-kō-saw'rus). [Gk, *dolichos*, long; *saura*, lizard.] A slender reptile, known only by fossil vertebræ, found in Wealden.

Dolium, (dol'i-um). [L. *dolium*, tun.] A univalve mollusc, found fossil in chalk rocks.

Dolmen, (dol'men). [Celt. *daul*, table; *men*, stone.]=Table-stone: a stone erection, like a room with a flat roof, a relic of pre-historic times.

Dolomite, (dol'ō-mīt). [M. Dolomieu.] A granular variety of magnesian limestone, used as a building stone: a mineral substance crystallising in hexagons.

Dolphin, (dol'fin). [*Delphin*, the Greek name.]=Delphinus: an animal resembling the whale.


Dolphin.

Dome, (dōm). [Gk. *doma*, house.] A spherical roof to a building, properly confined to the outer part, the inner being called a cupola.

Dominant, (dom'i-nant). [L. *dominor*, I rule.] The fifth note of the musical scale, also called Sol. *D. chord*: the chord of this note.

Donacia, (don-ā'si-a). [Gk. *donax*, reed] Elytra found fossil in Newer Pliocene rocks.

Donkey-engine. A small auxiliary engine used for pumping, lifting, &c.

Donjohn, (don'jōn). [The French word.]= Keep: a strong tower within a fortification.

Donzella, (don-zel'la). A small eel-like fish, found in the stomach of Holothuria.

Doom palm, (dōom)=Hyphæne thebaica= Gingerbread tree: a palm tree of Upper Egypt.

Dorado, (dō-rā'dō). [Sp. *dorado*, *gilt-head*, a fish.]=The sword-fish. An unimportant southern constellation.

Dor-beetle=Geotrupes vulgaris: an insect belonging to Coleoptera; also called *clock* and *watchman*.

Dorcatherium, (dor-ka-thē'ri-um). [Gk. *dorkas*, deer; *therion*, beast.] An extinct Mammalian stag-like animal, known by fossil remains in Miocene rocks.

Dordogne caves, in S. of France, contain remains of reindeer, &c., belong to Reindeer period, *q.v.*

Doree, (dō-rā'). [*Dorée*, the French name.] =Zeus faber: a sea-fish of a yellow colour, belonging to Scomberidæ.

Dorfel. A mountain peak in the moon.

Doridæ, (do'ri-dē). [Doris, *q.v.*]=Sea-lemons: animals belonging to Gasteropoda.
Dorippe. A very small crab.
Doris, (dō'ris), [Classical.]=Sea-lemon.
Dormouse, (dor'mous). [L. *dormio*, I sleep.] = Mus glis = Myoxus avellanarius: a small hybernating animal resembling the squirrel, living in trees.


Dormouse.

Doronicum, (do-ron'i-kum). [*Doronigi*, the Arabic name.] = Leopard's bane: an herb, with yellow flowers, belonging to Asteraceæ.
Dorsal, (dor'sal). [L. *dorsum*, back.] Belonging to or relating to the back. *D. region:* the Vertebræ, &c. *D. fin:* a variety of median fin, *q.v.*, formed by an expansion of the integument of the back. *D. side* of a bivalve: that on which the valves are hinged.
Dorsibranchiata, (dor-si-brang-ki-ā'ta). [Dorsal and Branchiata, *q.v.*] = Errantes: a division of Annelida, in which the branchiæ are attached to the back, including sea-centipedes and sea-mice.
Dorsigera, (dor-sij'e-ra). [L. *dorsum*, back; *gero*, I carry.] Opossums with undeveloped pouches, who carry their young on their back.
Dory, (dō'ri)=Doree, *q v.*=Zeus faber: a sea fish.
Dorypterus, (dor-ip'ter-us). [Gk. *dory*, lance; *pteryx*, fin.] A ganoid fish, known by fossil remains in Permian rocks.
Double, (dub'l). [The French word.] *D. ordinate*=Applicate ordinate, *q.v.* *D. refraction:* the refraction of a single ray of light into two, when passing through such crystals as Iceland spar, emerald, &c. *D. salts:* in which two bases are united with the same radicle. *D. stars:* Castor, Cor-Caroli, Polaris, Rigel; about 6000 known.
Doubly-symmetrical type of animals. Von Bær's term for Vertebrata.
Doum=Doom-palm, *q.v.*
Dourada = Coryphæna equisetis: a fish of Madeira.
Dove, (duv). [*Duva*, the A.-S. name.]= Columbus: the type of Columbacei, *q.v.*
Dove's syren. [Professor Dove.] An apparatus by which the rate of vibration of any sounding body can be ascertained.
Dowks, (dowks)=Fissures, or the contents of fissures, in rocks.
Down, (down). The soft feathers of birds, usually on the summits of first true feathers.
Downton sandstone. [Downton, near Ludlow.]=Tilestones, *q.v.*
Draba, (drā'ba). [Gk. *drabe*, acrid.]=Whitlow grass: a small herb, belonging to Brassicaceæ, named from the taste.
Draco, (drak'ō). [The Latin name.] 1.= Dragon: a lizard belonging to the family Agamidæ. 2.=The Dragon: a northern constellation, containing many second class stars, one of which, γ Draconi, is the one used by Bradley in the discovery of aberration of light.
Draconyl, (drak'o-nil). [Dragon's blood, *q.v.*] =Metastyrol, *q.v.*: a solid substance obtained from dragon's blood.
Dracunculus, (drak-un'ku-lus). [Dim. of Draco, *q.v.*] A small lizard resembling Draco, *q v.*
Dragon, (drag'on). [*Drakon*, the Greek name.] *D. blood:* resin from Dracæna draco, Calamus draco, and other trees. *D. fish* = Dragonet = Callionymus: a sea-fish belonging to Gobiadæ. *D. flies*=Libellulæ: large beautifully coloured insects belonging to Orthoptera. *D. tree*=Dracæna: a plant belonging to Liliaceæ.
Dragonet, (drag'o-net). A fish, belonging to Gobiidæ. *Gemmeous D.*=Male of Callionymus lyra: brilliant colours.
Dredge, (drej). [*Dræge*, the A.-S. word.] For deep-sea sounding. An apparatus for obtaining specimens of sand, shells, &c., from the bottom of the sea. *Ball's D.*, *q.v.* *Naturalist's D.*, larger, with large hempen tangles.
Dredging. Removal of matter deposited at the bottom of rivers or the sea.
Dressing. The term used to describe the various processes by which metals are separated from the earthy matter.
Drift. 1. Any loose matter transported by water or ice. 2 =Mine=Heading: an exploratory passage in a tunnel. *D. formation* =Glacial formation: loose accumulations of sand, gravel, &c. *D. period*=Palæolithic period.
Drill, (dril)=Cynophalus sp.: a large black-faced baboon
Drinker moth=Odonestes potatoria.
Driver, (drī'ver). A general term for any piece of machinery which transmits motion to another. *D. ant*=Anomma: named from going in large numbers, and driving insects &c., before it. *D. spanker:* a sail.
Driving, (drī'ving). *D. wheel:* the wheel by the revolutions of which motion is communicated to the machinery, &c. *D. point:* the point at which motion is communicated by the driver, *q.v.*
Dromaius, (drom-ī'us). [Gk. *dromaios*, running.] A bird, belonging to Cursores, resembling the ostrich. *D. Novæ Hollandiæ* =Emeu. *D. irroratus:* an emu, the male of which is gentle, the female large and quarrelsome.
Dromatherium, (drom-a-thē'ri-um). [Gk. *dromaios*, running; *therion*, beast.] A small insectivorous mammal, known by fossil remains, found in Trias of America.
Dromedary, (drom'e-da-ri). [*Dromadaire*, the French name.] = Arabian camel: an animal, having one hump, belonging to Ungulata.
Dromilites, (drom-i-lī'tez). [Gk. *dromaios*, swift; *litheos*, stony.] A small crustacean, found fossil in London clay.
Dromornis, (drom-or'nis). [Gk. *dromos*, running; *ornis*, bird.] *D. Australis:* an extinct struthious bird of Australia.
Drone, (drōn). [*Dran*, the A.-S. name.]= The male bee. *D. fly*=Eristalis tenax: an insect belonging to Diptera.

Drop-wort, (drop'wurt)=Spiræa filipendula: an herb belonging to Rosaceæ. *Water D.*=Œnanthe: an herb belonging to Umbelliferæ. *D. of water*: a colourless transparent topaz.

Drosera, (dros'e-ra). [Gk. *droseros*, dewy.]=Sundew: an herb the type of Droseraceæ.

Droseraceæ, (dros-er-ā'se-ē). [Drosera, *q.v.*]=Sundews: marshy herbs, sometimes poisonous, with small violet-like flowers, belonging to Berberales.

Drummond-light=Oxyhydrogen light: a yellow light produced by heating a ball of lime in hydrogen which is burning in oxygen; also called lime light.

Drupaceæ, (droo-pā'se-ē). [Drupe, *q v.*]=Almond-worts: trees and shrubs, with regular flowers, belonging to Rosales; also called Amygdaleæ.

Drupe, (droop) [L *drupa*, an over-ripe olive.] A fruit such as the cherry or peach, with a succulent substance surrounding a hard centre, and having a leathery covering.

Drusy minerals, (drōō'zi). [Gk. *drosos*, dew-drop.] Those that are sprinkled with minute crystals of the same or another kind

Dry fruits. Fruits having a thin pericarp and little or no juice. *v.* Fruits.

Dry-rot. 1. Decomposition: the carbon and hydrogen are changed into carbonic anhydride and water by the absorption of oxygen. 2. Fungi, such as Merulius lacrymans and Polyporus hybridus, which grow upon wood and animals.

Dry-piles. A number of discs of leather, paper, &c., coated on one side with an electro-negative, and on the other with an electro-positive substance, which form a Voltaic battery of limited power.

Dryas, (drī'as). [Gk. *dryas*, wood-nymph] A shrub belonging to Rosaceæ

Drying oils, such as linseed, walnut, and hemp oils, &c, which absorb oxygen and solidify, for which reason they are used in painting.

Dryobalanops, (drī-o-bal'a-nops). [Gk. *drys*, oak; *balanos*, acorn.] A tree belonging to Dipteraceæ.] *D. camphora*=Camphor tree.

Dryopithecus, (drī-o-pi-thē'kus) [Gk *drys*, tree; *pithekos*, ape.] An ape living amongst trees.

Dualistic system of chemical combination, in which salts are considered as formed by the union of two binary compounds; thus sulphate of potassium is formed by the combination of sulphuric acid and oxide of potassium, each of which is a binary compound.

Dubescq's electrical lamp. An apparatus by which the electric light is made continuous and steady.

Dubhe. A star=αUrsæ Majoris.

Duchess. A term used for roofing slates 24 inches by 16 inches.

Duck, (duk).=Anas: an aquatic bird belonging to Natatores.

Duck-bill, (duk'bil)=Ornithorhynchus=Water mole: an aquatic animal; also called Platypus, having a mouth resembling a duck's bill; also called Duck-mole.

Ducks—Anatidæ, *q v.*

Duckweed, (duk'wēd)=Lemna: a small aquatic plant, consisting of floating fronds, with very minute flowers, belonging to Pistiaceæ. The lowest known form of phanerogamous plants.

Duckweeds=Pistiaceæ: plants of which duckweed is the type.

Duct, (dukt)=A tube.

Ductility, (duk-til'i-ti). Used of the tenacity of some metals, by which they can be drawn into wires, often very fine.

Dudley limestone=Wenlock limestone: a sub-division of the Wenlock formation in Upper Silurian strata

Dufrenite. A mineral containing iron and magnesium.

Dugong, (dū'gong). [The Malayan name.]=Halicore=Sea-cow: a cetacean animal, found in the Indian Ocean, feeding on vegetables.


Dugong.

Duhanel's graphic method of marking the vibrations of a sounding body by traces on a blackened sheet of paper.

Dulcamara, (dul-ka-mā'ra). [L. *dulcis*, sweet; *amarus*, bitter.]=Bitter-sweet=Woody nightshade=Solanum dulcamara.

Dulcite, (dul'sit). [L. *dulcis*, sweet.]=$C_6H_{14}O_6$: a saccharine substance obtained from milk sugar.

Dulong and Petit's law. That specific heats of simple bodies are inversely as their atomic weights.

Dulse, (duls). [The Scotch word.]=Rhodomenia palmata: an edible sea-weed, common in Scotland.

Dumb-bell cluster of stars=Hour-glass nebula, in Vulpecula.

Dumb cane=Diffenbachia seguiana, a plant, which, when eaten, causes the tongue to swell so as practically to cause dumbness.

Dumortier's classification of plants:—

Staminacia—
- Corticalia.
- Decorticalia.

Pollinacia—
- Capsellia.
- Ecapsellia.

Fluidacia—
- Soligrania.
- Plurigrania.

Dunes, (dūnz). [Celtic *dun*, a hill.] Low sand hills on the coast.

Duodenum, (dū-o-dē'num.) [L. *duodeni*, twelve inches.] The portion of the intestine communicating with the stomach, into which the food passes from the stomach, and in which it is converted from chyme into chyle by the biliary and pancreati secretions.

Duplicate ratio. The ratio of the squares of two numbers is the duplicate ratio of the numbers. Ex.: the duplicate ratio of 2 and 3 is the ratio of 4 to 9.

Dura-mater, (dū'ra-mā'ter.) [L. *durus*, hard:

mater, mother.] A tough fibrous membrane lining the cavity of the skull and spinal column.

Duramen, (dū-rā'men). [L. *duramen*, hardness.] = Heart-wood: the hardest part of the timber of a tree.

Durene=$C_6H_2(CH_3)_4$: a hydrocarbon of the benzol series; also called tetra-methyl benzol.

Durian (dū'ri-an). [Malay, *dury*, thorn.]= Durion: the fruit of Durio zibethinus, which has a thorny covering.


Durian

Durio, (dū'ri-o). [Durian, *q.v.*] A plant of W. Indies, belonging to Bombaceæ.

Dusky ant=Formica fusca: a burrowing ant.

Dust, (dust). [*Dus*, the Gaelic word.] *D. fungi* = Myxogastres, *q.v.*: found in tanpits.

Dutch, (duch). [D. *duitsch*, popular.] *D. clover* =Trifolium repens. *D. liquid*=$C_2H_4Cl_2$= Glycol dichloride=Ethylene dichloride: an aromatic colourless liquid, compounded of olefiant gas and chlorine. *D. metal*=D. leaf: an alloy of brass, with a large admixture of copper, beaten out into thin plates. *D. roots* =Hyacinthus nutans. *D. rush*=Equisetum hyemale.

Dutchman's-pipe=Tatua morio: a wasp, found in Central America, named from the shape of its nest.

Duty. *D. of steam engine:* the amount of work done in relation to the fuel used. 1 cwt. of coals will, in burning, produce a force sufficient to raise from 50 to 100 million pounds one foot, according to the efficiency of the engine used.

Dwale, (dwāl)=Atropa=Deadly Nightshade: a poisonous herb, belonging to Solanaceæ.

Dwarf palm=Opuntia vulgaris; also=Chamerops humilis.

Dyad, (di'ad). [Gk. *dyas*, two.]=Diatomic =Bivalent=Chemical elements: one equivalent of which is equivalent to 2 equivalents of hydrogen in combination.

Dyads. Elements which unite with two atoms of hydrogen: the molecule of a dyad is two atoms.

Dyas, (dī'as). A term proposed by M. Marcon for "Permian."

Dycrasite group=Basic group.

Dyeing. The change of colour given to woollen or cotton articles by immersion in coloured solutions, with or without the use of a *mordant*, *q.v.*

Dyer's greenwood=D. broom=Genista tinctoria: a plant belonging to Fabaceæ. *D. weed*=Reseda luteola: an herb belonging to Brassicaceæ.

Dyestuffs. Mostly from vegetables, some from animals, some from minerals.

Dyke, (dīk). Intrusions of igneous into stratified rocks, usually more or less vertical.

Dynamic, (di-nam'ik). [Gk. *dynamis*, force.] Relating to forces that produce change of motion in solid bodies. *D. absorption* = Dynamic cooling, *q.v.* *D. cooling:* the cooling of a vessel when rapidly exhausted of the contained air. *D. energy*=Actual energy = Moving force: the force contained in a moving body. *D. head*=$\frac{p}{g}$. the expression for a liquid raised above its natural level by pressure: p=the pressure; g=the specific gravity of the liquid. *D. heating:* the heating of an empty vessel by the friction of a liquid or gas entering it. *D. radiation* =Dynamic heating, *q v*

Dynamical, (dī-nam'i-kal). [Dynamic, *q.v*] *D theory of heat:* that it is motion of the ultimate particles of matter, and in no sense material; a form of motion of a minute character.

Dynamite, (dī'na-mīt). [Gk *dynamis*, force.] A compound of nitro-glycerine and earth, which is very explosive.

Dynamometer, (dī-na-mom'e-ter)=Indicator: an apparatus which measures energy, *e.g.*, a spring balance.

Dyne, (dīn). [Gk. *dynamis*, force.] Proposed by Everett as an absolute unit of force.

Dyslysin, (dis'lis-in). [Gk. *dys*, difficult: *lysis*, solution.] $C_{48}H_{72}O_6$: a resinous insoluble substance obtained from choloidic acid and hydrochloric acid

Dyticidæ, (dī-tis'i-dē). [Dyticus, *q.v.*] A family of water beetles, belonging to Hydradephaga, that are first aquatic, then terrestrial, finally amphibious

Dyticus. The typical genus of Dyticidæ.

E.

Eagle, (ē'gl). [*Aquila*, the Latin name.]= Aquila. 1. A powerful diurnal bird of prey, belonging to Falconidæ. *Bald E.* = Haliaëtus leucocephalus. *Booted E.*=Aquila pennata. *Cinereous E.*=Haliaëtus albicilla. *Crested E.*=Thrasaëtus harpyia. *Golden E.* =Aquila chrysætos. *Harpy E.*=Crested E., *q.v.* *Martial E.*=Spizaetus bellicosus. *New Holland White E.*=Astur Novæ Hollandiæ. *E. Owl*=Great Owl=Bubo maximus. *E. stones:* a variety of iron ore. 2. A constellation in the northern heavens. *E. wood:* Agila wood, *q.v.*

Eagre, (ē'ger). [A.-S. *eagor*, water.]=Bore, *q.v.*

Ear, (ēr). [*Eare*, the A.-S. name] The organ of the sense of hearing; a very refined modification of the sense of touch, by means of the nerve of hearing, which is sensitive to vibrations between 16 and 38,000 per second. *E. shell:* Guernsey E.=Ormer; Furrowed E.= Stomatia rubra. *E. trumpet:* an instrument to assist deaf persons in hearing by collecting

a greater volume of sound and transmitting it to the ear.

Earth, (ĕrth). [*Eordhe*, the A.-S. name.] The general term for the land, including all kinds of rocks, sand, clay, limestone, granite, &c.; also used for the whole globe. Supposed by Hopkins to have a crust at least 1000 miles in thickness, and by Thomson to be as a whole more rigid than steel. *Earth's mean density:* about 5 5 as compared with water. *E. crab*=Mole-cricket, *q.v.* *Earth's crust:* applied to that portion of the earth, about 10 miles in thickness, which is visible, or which can be reasoned about from observation. *E. fly*= Chigoe *q.v.* *E. metals:* aluminum, glucinum, and six other metals with similar qualities, and having great affinity for oxygen. *E. nut*=Pig nut, *q.v.* *E. quakes:* commotions in the crust of the earth, due to subterranean causes. *Earthquake bands. v.* Seismology. *E. shine:* the reflection of the earth's light from the moon. *E. worms* = Annelida terricola = Lumbrici: worms which perforate the earth. *E. worms*= Lumbrici, *q.v.*

Earths, (ĕrths). A general term for yttria, zirconia, glucina, alumina, and thorina. *Alkaline E.*=Baryta, calcia, lithia, magnesia, and strontia.

Earthenware, (ĕrth'en-wār). Porcelain, china, delf, &c.; domestic utensils, pipes, &c., made of baked clay mixed with flint, &c.

Earwig, (ēr'wig). [*Earwigga*, the A.-S. name.] =Forficula: an insect, common in damp places feeding on leaves, &c., belonging to Orthoptera, and having very short wing-cases.


Earwig.

Earwigs, (ēr'wigz)=Dermatoptera, *q.v.*=Dermaptera. *Great E.*=Labidura gigantea. *Little E.* = Labia minor. *Common E.*=Forficula auricularia.

Easel animalcule=Pluteus, *q.v.*: the larval form of some sea-urchins, sand-stars, &c.

Ebenaceæ, (eb-en-ā'se-ē). [*Ebenus*, the Latin name.] = Ebenads: ebony, ironwood, &c., shrubs, and trees, chiefly tropical, with leathery leaves and black heavy timber, belonging to Gentianales.

Eboes. An African people.

Ebonite, (eb'o-nīt). [Ebony, *q.v.*] A compound of caoutchouc and sulphur.

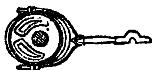
Ebony, (eb'o-ni). [*Ebenus*, the Latin name.] Wood of Ebenaceæ: black, hard, heavy: can be polished in a high degree. *E. tree*=Diospyros ebenum: an East Indian tree. *E. tree* of St. Helena, peculiar to the island, now extinct.

Ebullition, (eb-ū-lish'un). [L. *Ebullio*, I boil up.]=Boiling: the continuous and rapid production of vapour by the application of heat to a liquid, which takes place when the tension of the vapour equals the pressure of the air.

Ecaudate, (e-kaw'dāt). [Caudate, *q.v.*] Having no tail.

Ecblastesis, (ek-blas-tē'sis). [Gk. *ek*, out of; *blastes*, branch.] Term used by Engelmann for axillary prolification.

Eccentric, (ek-sen'trik). [L. *ex*, out; *centrum*, centre.] *E. circle:* a circular plate which revolves round a point in itself, which point is not the centre.


Eccentric.

Ecderon, (ek'de-ron). [Gk. *ek*, out of; *derma*, skin.] The outer layer of ectoderm, *q.v.*, corresponds to epiderm.

Ecdysis, (ek'dis-is). [Gk. *ekdysis*, a throwing off.]=Moulting: casting the skin.

Echelon lens, (esh'long). [F. *echelon*, round of a ladder.] A compound lens having a series of concentric annular lenses arranged round a central lens, so that all have a common focus; used for lighthouses.

Echiales, (ek-i-ā'lēz). Plants with dichlamydæous monopetalous flowers and nut-like fruit, belonging to Perigynous Exogens.

Echidna, (ek-id'na). [Gk. *echinos*, hedgehog.] =Porcupine Ant-eater: a burrowing ant-eating quadruped of Australia: a division of Monotremata.

Echimys, (ek-ī'mis). [Gk. *echinos*, spring; *mys*, rat.] A small rodent quadruped, known by fossil remains, found in Recent rocks of S. America.

Echinaster, (ek-ī-nas'tĕr). [Echinodermata, *q.v.*] An animal, belonging to Echinodermata, the larval state of which is but imperfectly developed.

Echini, (ek-ī'ni). [Gk. *echinos*, sea-urchin.] Fossils, covered with spines, abundant in Chalk, the remains of animals belonging to Echinodermata.

Echinid, (e-kī'nid). [Gk. *echinos*, sea-urchin.] Individual of Echinodermata.

Echinidea, (e-kī-nid'e-a). [Gk. *echinos*, sea-urchin.]=Sea-urchins: a division of Echinodermata; sea stars in which the arms are folded over so as to form a spheroidal or discoidal body; also called Echinidæ.

Echinites, (ek-i-nīts' or ek-i-nī'tēz)=Echini, *q.v.*

Echinococcus, (e-kī-no-kok'kus). [Gk. *echinos*, spiny; *kokkos*, berry.] The nurse-form of tape-worms, parasitic in other animals.

Echinodermata, (e-kī-no-dĕr'ma-ta). [Gk. *echinos*, spiny; *derma*, skin.]=Sea-urchins, star-fishes, sea-cucumbers, &c.: marine animals, forming a division of Annuloida, *q.v.*; more common at a depth below 20 fathoms. Found fossil from the Silurian epoch until now.

Echinoderms, (e-kī'no-dĕrmz). [Gk. *echinos*, spiny; *derma*, skin.]=Echinodermata, *q.v.*

Echinodon, (e-kī'no-don). [Gk. *echinos*, spiny; *odous*, tooth.] A reptile, known only by fossil remains, found in Jurassic rocks.

Echinoidea, (ek-i-noi'de-a). [Gk. *echinos*, hedgehog; *eidos*, form.]=Sea-urchins, &c., which have spiny skins.

Echinorhynchus, (e-kī-nor-ink'us). [Gk. *echinos*, hedgehog; *rygchos*, snout.] A vermiform parasite, having a proboscis with sharp hooks, but no mouth, belonging to

Acanthocephala, found in intestinal canal of birds and fishes.

Echinothuria, (e-kī-no-thu'ri-a). [Gk. *echinos*, spiny; *thurios*, covering.] A fossil sea-urchin, found in Upper Chalk rocks.

Echinothuridæ, (e-ki-no-thū'ri-dē). [Echinothuria, *q.v.*; Gk. *eidos*, form.] A family of sea-urchins, comprising the extant genera Calveria and Phormosoma, and the fossil Echinothuria.

Echinozoa, (e-kī-no-zō'a). [Gk. *echinos*, spiny; *zoon*, animal.]=Annuloida, *q.v.*

Echinus, (e-kī'nus). [The Latin name.]=Sea-urchins: globular, with spiny body, covered with calcareous plates; mouth a simple orifice with five sharp teeth, each enclosed in a large jaw.

Echium, (ek'i-um). [Gk. *echis*, viper.]=Bugloss: an herb belonging to Boraginaceæ.

Echo, (ek'ō). [The Latin word.] The repetition of a sound arising from its reflection from some large surface usually not less than 100 feet distant.

Ecitons=Foraging ants=Army ants: having no fixed home, but hunting in vast numbers after grasshoppers, spiders, &c; the eyes are often imperfect, and sometimes absent.

Eclipse, (ek-lips'). [*Ekleipsis*, the Greek word.] The disappearance of a planet or a star, the sun or the moon, by the removal of the source of light, or the interposition of an opaque body. *Annular E.:* when the centre of the object only is obscured, and the whole circumference is visible. *Partial E.:* in which a portion only is eclipsed.



Eclipse.

Ecliptic, (ek-lip'tik). [Eclipse, *q.v.*] The great circle of the heavens in which the sun appears to move, and on or near which the moon must be at the time of an eclipse.

Ecteron, (ek'ter-on). [Gk. *ek*, out of; *dermos*, skin.] Used for the outer layer of skin, whether epithelium or epidermis.

Ectocyst, (ek'to-sist). [Gk. *ektos*, outside; *kystis*, bladder.] The outer cell of a polype, a chitinous or calcareous membrane.

Ectoderm, (ek'to-derm). [Gk. *ektos*, outside; *derma*, skin.] Outer layer in Cœlenterata, from which the organs of motion are developed, sub-divided into ecderon and enderon.

Ectopistes, (ek-to-pis'tes). [Gk. *ektopizo*, I remove.] *E. migratorius*=Passenger pigeon.

Ectosarc, (ek'to-sark). [Gk. *ektos*, outer; *sarx*, flesh.] The outer layer of the Amœba.

Ectozoa, (ek-to-zō'a). [Gk. *ektos*, outside; *zoon*, animals.] Parasites living on the outer surface of other animals. *cf.* Entozoa.

Edaphodus, (e-daf'o-dus). [Gk. *edaphos*, foundation; *odous*, tooth.] A fish, belonging to Holocephali, known by fossil remains of jaws and spines, found in Tertiary rocks.

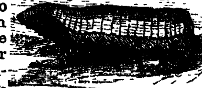
Eddy, (ed'di). [A.-S. *ed*, back; *ea*, stream; or Ice. *yda*, whirlpool.]=Vortex=Whirl: a stream which moves in either a spiral or circular direction.

Edelforsite. An impure variety of Wollastonite.

Edelite=Prehnite, *q.v.*

Edenite. A variety of Amphibole, *q.v.*

Edentata, (e-den-tā'ta). [L. *e*, without; *dens*, tooth.] Sloths, Armadillos, &c.: animals, belonging to Mammalia, in which the teeth are either wholly or partially absent: includes also the megatherium, &c.


Edentata.

Edentula, (e-den'tu-la). [L. *e*, without; *dens*, tooth.] Owen's term for Ant-eaters.

Edentulous, (e-den'tu-lus). [Edentula, *q.v.*]=Toothless.

Edestes, (e-des'tes). [Gk. *edestes*, devourer.] A fish, known only by fossil spines, found in coal in Indiana, named from the supposition of its being a shark.

Edible, (ed'i-bl). [L. *edo*, I eat.] The following is a list of the genera, some of the species of which are edible. *E. Fucaceæ:* Laminaria, Sargassum, Alaria, Durvillæa, Fucus, Scytosiphon. *E. fungi:* chiefly Agaricus. *E. lichens:* Cetraria, Gyrophora, Cenomyce, Parmelia, Peltigera, Stictypulmonacea. *E. sea-weeds:* Plocaria, Gelidium, Chondrus, Rhodomenia, Iridæa, Laurentia, Fucus.

Edingtonite. A mineral, chiefly hydrous silicate of aluminum and barium.

Edriasterida, (ed-ri-as-ter'i-da). [Gk. *hedraios*, sessile; Asteridea, *q.v.*] Extinct animals, belonging to Echinodermata, found only in Palæozoic rocks.

Edriopthalmia, (ed-ri-op-thal'mi-a). [Gk. *hedraios*, sessile; *ophthalmos*, eye.]=Hedræophthalmia=Tetradecapoda: a division of sessile-eyed Crustacea, including Amphipoda and Isopoda, aquatic representatives of wood-lice.

Educabilia, (ed-ū-kā-bil'i-a). [L. *educo*, I educate; *habilis*, suitable for.] Term used by Bonaparte, *q.v.*, for a portion of Mammalia, including Primates, Feræ, Pinnipedia, Cete, Belluæ, Pecora.

Educt, (ē'dukt). [L. *educo*, I draw out.] A chemical term used to express an already existing compound, separated, in the course of chemical operations, from others in which it had been included. *cf.* Product.

Edulcoration, (ē-dul-kor-ā'shun). [L. *e*, out; *dulcorare*, to sweeten.] The separation of insoluble matter from soluble by washing, used where the insoluble only is preserved.

Edward's (Milne) classification of animals.

Osteozoaria=Vertebrata.
Entomozoa=Anellata: insects, &c.
Malacozoaria=Mollusca.
Zoophytes=Radiata.

Edwardsite=Monazite.

Eel, (ēl). [*Æl*, the A.-S. word.]=Muræna=Anguilla: a fresh-water fish, with cylindrical body, belonging to the Teleostei. *Conger E.*=Conger vulgaris. *Electrical E.*=Gymnotus: an eel-like fish of S. America, which has the power of giving electrical shocks to persons touching it. *Glass E.* *v.* Glass-eels. *Sand E.*=Ammodytes tobianus.

Eels, (ēlz). [Eel, *q.v.*]=Murænidæ, *q.v.*

Effervescence, (ef-fęr-ves'ens). [L. *effervesco*, I boil up.] The escape of a gas from a liquid.

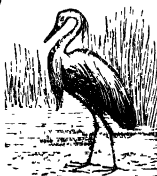
Efflorescence, (ef-flō-res'ens). [L. *effloresco*, I flourish.] 1. The superficial or complete conversion of a crystal into a powder, whether amorphous or crystallitfe. 2. The powder so formed. 3. A general term for the blossoming of plants.

Eft, (eft). [*Efeta*, the A.-S. name.] 1.=Newt =Triton: a young tadpole. 2. *Land E.*= Salamandra: common in Europe, but unknown in England.

Efts, (efts). [Eft, *q.v.*] A general name for land lizards: animals belonging to Batrachia.

Egeran, (eg'e-ran). [Eger, in Bohemia.]= Vesuvianite, *q v.*

Egg, (eg). [*Ag*, the A.-S name]=Ovum: a cell containing the germ of a new individual. In the case of oviparous animals this cell, enclosed in a shell, is deposited before the birth of the young one; in the case of viviparous animals, birth takes place before the expulsion, and the egg has no hard shell. *E. apples*=Fruit of Solanum melongena. *Electrical E*: an egg-shaped electric light, obtained by passing an electric current through an exhausted ellipsoid glass vessel. *Poached E.* =Ovulum ovum. *Warty E.*=Ovulum verrucosum: two varieties of the cowry. *Sea E.*= Sea-urchin, *q.v.*


Egret.

Eglantine, (eg'lan-tīn). [The French name]= Sweet-briar=Rosa rubiginosa: a plant belonging to Rosaceæ.

Egret, (ē'gret). [*Aigrette*, the F word.] 1.=Ardea egretta: a small white heron. 2. A monkey, having erect hairs on its head, belonging to Macacus. 3. A tuft of feathers or hair.

Ehrenberg's classification of animals (excluding man):—

Myeloneura—
- Mammalia.
- Birds.
- Amphibia.
- Fishes.

Gangiioneura—
- Articulata.
- Mollusca.
- Tubulata.
- Racemifera.

Ehretiaceæ, (e-ret-i-ā'se-ē). [Named after M. D. G. Ehret.]=Ehretiads: herbs, shrubs, and trees, chiefly tropical, with gyrate monopetalous flowers, belonging to Echiales.

Eider-duck, (ī'dęr). [*Eider*, the German name.]=Somateria mollissima: a large seaduck, the down of which is very soft and warm.

Eidograph, (ī'dō-graf). [Gk. *eidos*, form; *grapho*, I write.] An instrument for reproducing drawings.

Eighth, (āt-th)=Octave: a musical note which is made by half as many, or twice as many, vibrations as a given note is the octave of that note, being eight notes lower or higher.

Eimeoan. An Oceanic race.

Ekeing, (ē'king). [A.-S. *eacan*, to increase.] Timber filling up the space between the apron and beam, and between the stern-post and beam, of a ship.

Elæagnaceæ, (e-lē-ag-nā'se-ē). [Gk. *elaia*, olive; *agnos*, vine.]=Oleasters, scaly trees and shrubs, with small flowers, belonging to Amentales.

Elaene, (e-lān). [Gk *elaion*, oil.]=C_9H_{18}= Monylene: a liquid hydrocarbon.

Elæocarpaceæ, (el-ē-ō-kar-pā'se-ē) [Gk. *elaia*, olive; *karpos*, fruit.]= Eleocarps: trees, chiefly Indian, resembling lindens; also considered as belonging to Tiliaceæ; named from the fruit resembling an olive.

Elæopten, (el-ē-op'ten). [Gk *elaion*, oil.] The liquid portion of cooled essential oils.

Elaic acid, (el-ā'ik). [Gk. *elaion*, oil.]=Oleic acid, *q.v.*

Elaidic acid, (el-a-id'ik). [Gk. *elaion*, oil.]= $C_{18}H_{34}O_2$: a solid fatty acid, obtained by action of nitrogen peroxide on oleic acid.

Elaidin, (el-a-id'in). [Gk. *elaion*, oil.] A solid fat obtained from olein by action of peroxide of nitrogen.

Elain, (el-ā'in). [Gk. *elaion*, oil.]=Olein, *q.v.*

Eland. (ē'land) =Oreas canna: a large antelope of S. Africa; also called the Cape Elk.


Eland.

Elaphomyces, (el-a-fō-mī'sēz). [Gk. *elaphas*, elephant; *mykes*, mushroom.] Fungi belonging to Tuberaceæ.

Elapidæ, (ē-lap'i-dē). [Elaps, *q v.*] A group of poisonous serpents belonging to Colubridæ.

Elapotherium, (ē-lap-ō-thē'ri-um). An extinct mammalian animal.

Elaps, (ē'laps) [The Greek name.] A snake: the type of Elapidæ.

Elasmobranchii, (el-as-mō-brang'ki-a). [Gk. *elasma*, lamina; *bragchia*, gills.]=Sharks, rays, &c.: highly organised cartilaginous fishes, forming a primary division of Pisces, *q v.*; placoid, with fixed, pouch-like gills, a short intestine, and a spiral fold.

Elasmotherium, (el-as-mō-thē'ri-um). [Gk. *elasma*, plate; *therion*, beast.] An extinct pachydermatous animal, somewhat resembling the rhinoceros.

Elastic, (ē-las'tik). [*Elastique*, the French word.] *E. bitumen*=Elaterite, *q.v.* *E. tissue*=Cartilage, *q.v.*

Elasticity, (ē-las-tis'i-ti). [Elastic, *q.v.*] Tendency of a substance to preserve its original form and size, and to return to them after any small change, as in India-rubber, steel, &c.

Elater, (el'a-tęr). [Gk. *elater*, driver.]=Spiral threads, consisting of long cells with spiral bands.

Elateridæ, (el-a-ter'i-dē). [Elater, *q.v.*] Insects forming a division of Coleoptera. *Larvæ of E.*=Wire-worms, *q.v.*

Elaterin, (el-at-ē'rin).=$C_{20}H_{28}O_5$: white silky crystals from Momordica elaterium.

Elaterite, (el-at'ẹr-it). [Elater, *q.v.*]=Mineral caoutchouc: a solid elastic variety of bitumen;

Elatinaceæ, (el-at-in-ā'se-ē). [Elatine, *q.v*]= Water-peppers: small aquatic herbs, with rooting stems, belonging to Rutales.

Elatine, (el-at'in). [Gk. *elate*, fir tree.]= Water-wort: a small creeping aquatic herb, belonging to Elatinaceæ.

Elayl=Ethylene=Olefiant gas, *q.v.*

Elder, (el'dẹr). [*Holder*, the German name.] =Sambucus: a tree, the pith of which is very light, belonging to Caprifoliaceæ. *E moth*=Phalæna sambucaria: an insect belonging to Lepidoptera.

Elecampane, (el-e-kam-pān'). [Corruption of the French name.] 1.=Inula Helenium. a plant belonging to Asteraceæ. 2. A medicine obtained from the root of this plant.

Elecampin, (el-e-kam'pin). [Elecampane, *q.v.*] =Inulin, *q.v.*: a starch-like principle found in Elecampane.

Electra, (ē-lek'tra). [Classical] 1. A minor planet, No. 130, discovered 1873. 2 One of the Pleiades, *q.v.* 3. A genus of membranous polypes.

Electric, (ē-lek'trik). [Electricity, *q.v*] Connected with electricity; having electricity for its origin or motive power. *E battery:* a series of Leyden jars. *cf.* Galvanic battery. *E. chimes:* a set of small bells which can be sounded by electricity. *E. clock:* a clock in which a current of electricity supplies the motive power. *E. current:* the transmission of electric force. *E discharge:* if sudden, in the form of a spark; if continuous, in the form of a current. *E. eel*=Gymnotus: a fish, resembling the eel, which is capable of giving electric shocks. *E. egg:* an egg-shaped glass vessel, which glows with light when a current passes through it. *E. fish*=Torpedo, silurus, gymnotus, &c. *E. fluid:* the hypothetical medium of electricity. *E. insulation:* the separation of an electrified body from conducting bodies by the interposition of a non-conductor. *E. light*= Voltaic arc: the light emitted by an electric current in crossing over a small interval of space. *E. machine:* any apparatus for the generation of electric force. *E. organs:* for storing up electricity; found only in some fishes; *v.* Gymnotus. *E. pendulum*=Pith-ball electroscope: a pith ball suspended by a non-conducting thread. *E. ray*=Torpedo= Raia, *q.v.* *E. resistance:* small in conductors, great in non-conductors; the force required to electrify a given body. *E. spark:* an intermittent form of electric light. obtained when a conducting body is brought near an electrified body. *E. telegraph:* an apparatus for the transmission of signals by electricity.

Electricity, (ē-lek-tris'i-ti). [Gk. *elektron*, amber.] A form of energy, excited by friction, chemical action, magnetism, &c., and capable of being converted into heat, light, magnetism, &c., at pleasure, by suitable apparatus. Probably a variety of imperceptible molecular motion. *E. of induction:* the transmission of electric force through a badly conducting substance. *Chemical E.:* the development of electric force by chemical action; usually by the action of an acid on a metal. *Frictional E.:* development of electric force by friction upon the surface of badly conducting substances. *Galvanic E.* =Chemical E.; named after Galvani. *Resinous E* =Negative Electricity: developed by friction on resinous surfaces. *Vitreous E.*= Positive electricity: developed by friction on glass and other vitreous surfaces. *Voltaic E.* =Chemical electricity, named after Volta.

Electro, (ē-lek'trō). [Electricity, *q v.*]. A prefix indicating electricity as the origin. *E. chemical series* arrangement of a number of substances in order of their affinity for positive or negative poles of a battery. *E. telegraph*, in which chemical decomposition is effected by means of a current, and so governed as to be a means of signalling. *E. dynamics.* the science of electricity as a cause of motion. *v* Dynamics. *E. magnet:* a piece of soft iron surrounded by a coil of wire, which is magnetised whenever a current passes through the wire. *E. metallurgy* = Electro-plating. *E motive force* the amount of electric force which is over and above the amount consumed in the machinery of generation, and so is capable of being utilised. *E negative elements:* those which go to the anode or positive pole. *E. plating:* coating of one substance by another by means of electricity *E. positive elements:* which in decomposition by electricity go to the cathode or negative pole. *E potential:* a measure of electric force. *v.* Potential. *E. series:* a number of substances arranged in order of their power to excite galvanic currents. *E. statics:* the science of electricity at rest.

Electrodes, (ē-lek'trōdz). [Electricity, *q.v*; Gk. *odos*, way.] The terminals or poles of a galvanic battery.

Electrolysis, (e-lek-trol'i-sis). [Electricity, *q.v.*; Gk *lysis*, loosening] Decomposition of chemical compounds by electricity.

Electrolyte, (ē-lek'tro-līt). [Electro, *q.v*; *lytos*, dissoluble] A compound chemical substance which can be decomposed by electricity.

Electro-magnetic units. 1. Ohm=10^7 natural units: measure of resistance. 2. Farad.= 10^7 natural units: measure of capacity. 3. Volt =10^5 natural units: measure of potentiality.

Electrometer, (ē-lek-trom'e-tẹr) [Electro, *q.v.*; Gk. *metron*, measure.] An instrument to measure the force of an electric current.

Electrophorus, (ē-lek-trof'o-rus). [Electro, *q v.*; Gk. *phoreo*, I bear] An instrument for collecting electricity, and exhibiting the phenomena of induction.

Electroscope, (ē-lek'trō-skōp). [Electro, *q.v.*; Gk. *skopeo*, I observe] An instrument for detecting and exhibiting the presence of electricity.

Electrotonus=Anelectrotonus and Catheleo-trotonus.

Electrum, (ē-lek'trum). [The Latin word.] 1.

A native rich alloy of gold or silver. 2.= Succinite.

Elements, (el'e-ments). [*Elementum*, the Latin name.] The constituents of a compound; also used for those chemical substances which cannot be decomposed by any known means. *Electro-positive E.:* those which go to the negative pole in chemical decomposition by electricity. *Electro-negative E.:* those which go to the positive pole.

Elemi, (el'e-mi). An odoriferous resin, obtained from Icica and other plants.

Elephant, (el'e-fant). [*Elephantus*, the Latin name.]=Elephas: a thick-skinned quadruped, forming a distinct order, Proboscidea, *q.v.*, of Mammalia: has no canine teeth, and the incisors become tusks; has very long prehensile nose called a trunk. *E. fish*=Callorhynchus antarctica. *E.'s tusk*=Dentalium arcuatum: a tooth-shell. *Sea E.*=A large seal=Morunga proboscidea *E. Hawkmoth*=Chærocampa elpenor. *E. shrew*=Macroscelides typicus.

Elephantiasis, (el-e-fan-tī'a-sis). [Elephant, *q.v.*] 1. A diseased condition of the skin, in which it becomes very thick. 2. A disease of the leg, which becomes enormously thickened.

Elephas, (el'e-fas). [The Latin name.]=Elephant, *q v.* *E. Africanus*=African elephant. *E. Indicus*=Asiatic elephant. *E. primigenius*=Mammoth.

Elimination, (ē-lim-in-ā'shun). [L. *elimino*, I remove.]=Removal or separation: especially used in algebra for the removal of two equal terms from an equation.

Eliquation, (ē-lik-wā'shun). [L. *eliquo*, I strain.] The separation of two solid substances by the melting of the more fusible.

Elizabethan architecture, (ē-liz'a-beth-an). [Queen Elizabeth.] A compound of Gothic and Italian architectures.

Elk, (elk). [*Elch*, the A.-S. name.]=Cervus alces=Moose: an herbivorous mammal with short neck, long legs, and large horns.

Ell, (el). [*Eln*, the A.-S. name.] A measure of length. *Flemish E.*=3 quarters of a yard. *English E.*=5 quarters. *French E.*=6 quarters.

Ellagic acid=C[illegible]H_6O_8: a crystalline powder, obtained from gall-nuts, having weak acid properties, and forming a constituent of some bezoars; also called bezoaric acid.

Ellipse, (el-lips'). [Gk. *elleipsis*, defect.]=Parallel projection of a circle: one of the conic sections: a curve in which the distances of any point from the two foci have always the same sum.



Ellipse.

Ellipsoid, (el-lip'soid). [Ellipse, *q.v.*; Gk. *eidos*, form.] A solid figure, formed by the revolution of an ellipse about its axis, any plane section of which is an ellipse or a circle.

Elliptical, (el-[illegible]-kal). [Ellipse, *q.v.*] Belonging to or resembling an ellipse. *E. polarization:* in which the vibrations are elliptical, in planes perpendicular to the direction of the ray. *v.* Polarization.

Ellipticity, (el-lip-tis'i-ti). [Ellipse, *q.v.*] The deviation of an ellipse from a circle, expressed by the excess of the longer diameter over the shorter, if one be 5 and the other 3, the ellipticity=$\frac{5-3}{5}=\frac{2}{5}$

Elm, (elm). [The A.-S. name.]=Ulmus: a tree, with small flowers and hard timber, the type of Ulmaceæ.



Elm.

Elmo's fire. *v.* St. Elmo

Elongation, (e-long-ā'shun). [L. *e*, from; *longus*, long.] The distance of any heavenly body from the sun, as seen from the earth.

Elonichthys, (el-o-nik'thus). [Gk. *helos*, marsh; *ichthys*, fish]. A fish belonging to Lepidoganoidei.

Elutriation, (e-lū-tri-ā'shun). [L. *elutrio*, I wash out.] The separation, by washing of the lighter portions of a powder.

Elvanite, (el'va-nīt). [Celt, *el*, rock; *van*, white.] A granitic rock, white when exposed to the weather, found in the form of dykes in Carboniferous rocks.

Elytra, (el'i-tra). [Gk. *elytron*, covering.] 1.= Imbricated plates or scales. 2.=Front wings of Coleoptera, which are covered by scales.

Elytron, (el'i-tron). [Gk. *elytron*, covering.] Singular of Elytra.

Elytrum, (el'i-trum). [Gk. *elytron*, covering.] The first pair of wings in beetles, which are hard, and cover the second pair.

Embolite, (em'bō-lit). [Gk. *embolon*, wedge.] A mineral, chiefly chloro-bromide of silver.

Embossing, (em-bos'sing). Covering wood, paper, cloth, &c., with ornamental raised work.

Embrasure, (em-brā'zhūr). An opening in a wall, usually with sloping sides, for the fire of a gun, or a window.



Embrasure.

Embrithrite, (em-brith'rīt). A mineral, chiefly sulphide of antimony and lead.

Embryo, (em'bri-ō). [*Embryon*, the Greek word.] The earliest stage of a young animal, before it is sufficiently advanced to be termed a fœtus: consists of three layers. 1. The outer, which becomes developed into nerves, muscle, and bone. 2. The medial, which forms the heart and circulating system. 3. The inner, which becomes the alimentary system. *Naked E.*= Spore. *E. in a receptacle*=Seed. *E. of man:* at first resembles all other embryos of plants and animals; successive differentiations limit it consecutively to animals, vertebrata, mammalia, placental mammalia, quadrumana, and man.

Embryology, (em-bri-ol'ō-ji). [Embryo, *q.v.*] The science of the successive modifications through which any organism passes in its

gradual development from the germ stage to the adult form; a sub-division of Biology, *q.v.*

Embryonic, (em-bri'on'ik). [Embryo, *q.v.*] Rudimentary: belonging to an embryo.

Emelinite=Chabazite, *q.v.*

Emerald, (em'ĕr-ald). [*Emeraude*, the French name.] A brilliant greenstone, a silicate of aluminum and glucinum; a pure variety of beryl; a mineral of the topaz group, crystallising in hexagons. *Oriental E.*: a green variety of sapphire. *E. copper*=Dioptase.

Emersion, (ē-mĕr'shun). [L. *emergo*, I come forth.] The re-appearance of a planet, &c., after eclipse; the opposite of immersion, *q.v.*

Emery, (em'ĕr-i). [Cape Emeri, in Naxos.] A coarse variety of corundum or native alumina.

Emetine, (em'e-tīn). A base obtained from ipecacuanha; used as an emetic.

Emeu, (ē'mū)=Emu=Dromaius: a bird of the ostrich kind, found in New Holland, belonging to Struthionidæ.


Emeu.

Emission theory of light. That light is the effect of emission of infinitely minute particles of matter.

Emmet, (em'et). [*Æmet*, the A.-S. name.]=Ant, *q.v.*: nearly obselete.

Emperor moth=Saturnia pavonia: named from its large size.

Empetraceæ, (em-pet-rā'se-ē). [Empetrum, *q.v.*]=Crowberries: small heath-like shrubs, with small flowers, belonging to Euphorbiales.

Empetrum, (em'pet-rum). [Gk. *en*, upon; *petron*, a rock.]=Crowberry: a shrub, common in stony places, with small flowers and edible berries, the type of Empetraceæ.

Empusa. An insect belonging to Orthoptera. *E muscæ*: parasitic on flies.

Emu=Emeu, *q.v.*

Emulsic acid, (ē-mul'sik). [Emulsin.] An acid derived from Emulsin. *q.v.*

Emulsin, (ē-mul'sin). [L. *emulgeo*, I milk.] =Synaptase: a substance, found in almonds, which acts as a ferment on amygdalin, and converts it into glucose, &c.

Emulsion, (ē-mul'shun). [L. *emulgeo*, I milk.] A compound of oil and water obtained by use of a third body, such as which will combine with both, named from often having a milky appearance.

Emys's system. [M. Emys, the inventor.] Of constructing large arches by a number of united layers of timber.

Emys, (em'is). [The Latin name.]=Terrapin =Speckled tortoise=Testudo orbicularis; a fresh-water tortoise belonging to Chelonia.

Emysaura, (em-i-saw'ra). [Emys and Sauria, *q.v.*] A tortoise resembling the Emys found in America.

Enaima, (en-ā'ma). [Gk. *enaimos*, having blood.] Aristotle's term for Vertebrata.

Enaliosauria, (en-al-i-ō-saw'ri-a). [Gk. *en*, in; *hals*, sea: *saura*, lizard.]=Ichthyopterygia and Sauropterygia.

Enaliosaurian, (e-nal-i-ō-saw'ri-an). [Gk. *enalyos*, living on the shore; Saurian, *q.v.*] Fossil reptiles of the Lias strata, including the Ichthyosaurus and Plesiosaurus.

Enamel, (en-am'el). [*Esmail*, the French word.] 1. A hard glossy substance, forming the crown of tooth, composed chiefly of phosphate and fluoride of lime. 2. Artifical compounds containing glass.

Encaustic, (en-kaw'stik). [L. *encausticus*, burnt in.] Having a pattern, usually of different colour, burnt in: used for tiles, &c.

Enceinte, (ang-sānt'). [The French word.] The outer wall of a fortification; the general enclosure.

Encephala, (en-sef'a-la). [Gk. *en*, in; *kephale*, head.]=Cephalophora: a primary division of Mollusca=Gasteropoda, Pteropoda, and Cephalopoda.

Encephalartos, (en-sef-a-lār'tos). [Gk. *en*, in; *kephale*, head, *artos*, bread.]=Caffer-bread; a tree, belonging to Cycadaceæ, found in Africa, from the starch of which bread is made.

Encephalon, (en-sef'a-lon). [Gk. *en*, in; *kephale*, head]=Brain: the whole brain, including so much of the spinal cord as is within the head.

Enchanter's nightshade=Circæa: a slender herb, with small flowers and creeping root-stock, belonging to Onagraceæ.

Encke's comet. [Prof. Encke of Berlin.] A telescopic comet of short period, returning every 3½ years. This period is shorter by some two hours each recurrence.

Encrinal marbles, (en-krī'nal). [Encrinites, *q.v.*] Containing encrinites.

Encrinites, (en'krin-its). [Gk. *krinos*, lily.] 1.=Stone lilies: fossil Crinoidea, found in all rocks since the Palæozoic, inclusive. 2.= Crinoidea, *q.v.*: a division of Echinodermata.

Encrinus, (en-krī'nus). [Gk. *krinos*, lily.]= Stone-lily.

Encystment, (en-sist'ment). [Gk. *kystis*, bladder.] A metamorphosis in some protozoa, during which they are motionless, and enclosed in a cyst; a method of reproduction.

Endecagon, (en-dek'a-gon). [Gk. *hendeka*, eleven; *gonia*, corner.] A regular plane figure having eleven sides and eleven angles.

Endellionite, (en'del'yu-nīt)=Bournonite, *q.v.*

Endemic, (en-dem'ik). [Gk. *en*, among; *demos*, people.] Peculiar to a certain locality or people. *E. diseases:* Anæmia, Goitre, Phthisis, Strumous, &c.

Enderon, (en'dĕr-on). [Gk. *en*, in; *deros*, skin.]=Dermis: the inner or true skin.

Endive, (en'dīv). [The French name.]= Cichorium endivia: an herb, belonging to Cichorium, used as a salad.

Endlicher's arrangement of plants, made in 1840, in use in Germany—.

- Thallophyta—
  - Protophyta.
  - Hysterophyta.
- Cormophyta—
  - Acrobrya.
  - Amphibrya.
  - Acramphibrya.

Endocardium, (en-do-kȧr'di-um). [Gk. *endon*, in, *kardia*, heart.] An internal lining to the human heart.

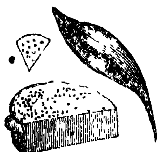
Endocarp, (en'do-kȧrp). [Gk. *endon*, in: *karpos*, fruit.] The inner layer of a carpel.

Endochrome, (en'dō-krōm). [Gk. *endon*, within, *chromos*, colour.] A colouring matter found in leaves.

Endocyst, (en'dō-sist). [Gk. *endon*, within, *kystis*, bladder.] An inner layer of cells.

Endoderm, (en'dō-derm). [Gk *endon*, within; *derma*, skin.] The layer of tissue, lining the inner cavity of the body in Hydrozoa, which absorbs the nutriment.

Endogens, (en'dō-jens) [Gk. *endon*, within: *gennao*, I produce] Plants having stem and leaves distinct; leaves with parallel veins, the new wood deposited inside, flowers in 3 or 6 parts, and one seed-leaf only; have endorhizal germination, and rarely live beyond 200 years: with one exception, *Pothocites Grantonii*, not found fossil in any primary rocks.


Endogens

Endolymph, (en'dō-limf). [Gk *endon*, within, Lymph, *q v*] A watery fluid in the semicircular canals of the ear.

Endophlœum, (en-dō-flē'um). [Gk. *endon*, inner, *phloios*, bark.]=Liber · the innermost layer of bark, consisting of fine woody fibres

Endopodite, (en-dop'o-dit). [Gk *endon*, within, *pous*, foot.] A portion of the limb of a Crustacean animal

Endorhizal, (en-do-rī'zal). [Gk. *endon*, within, *rhiza*, root] In plants, having the radicle protruded from within the embryo in germination.

Endosarc, (en'dō-sȧrk). [Gk. *endon*, inner; *sarx*, flesh] The inner layer of Amœbæ

Endoskeleton, (en-dō-skel'e-ton). [Gk. *endon*, inner; *skeletos*, skeleton.] The internal central skeleton of Vertebrate animals.

Endosmometer, (en-dos-mom'e-ter) [Endosmose and Meter, *q v.*] An apparatus for the illustration and measurement of endosmosis

Endosmose, (en'dos mōs) [Gk. *endon*, within, *osmos*, thrusting, from *otho*, I thrust.]=Endosmosis: if a membrane be placed between two mixable liquids of different densities, some of each will pass through, but more of one than of the other. The transfer of that which passes more rapidly is called endosmose; of the other, exosmose.

Endosmotic, (en-dos-mō'tik). [Endosmose, *q.v.*] Connected with endosmose, *q.v.*

Endosperm, (en'dō-sperm). [Gk. *endon*, within, *sperma*, seed.] A mass of tissue in which the embryos of seed-bearing plants are imbedded.

Endostyle, (en'do-stīl) [Gk. *endon*, within; *stulos*, pillar.] A long fold in the pharynx of Ascidians.

Energy, (en'er-ji). [*Energeia*, the Greek word.] Power of doing work. Used as equivalent to force *q.v.*, but implying no theory as to its origin. *Actual E.*=Dynamic E.=Vis viva=$\frac{mv}{2}$: capacity for doing work; the force present in a moving body, where m= mass and v=velocity *Possible E.*=Potential E.=Tension: capacity for doing work. *Kinetic E.*=Energy of motion=Actual energy, *q v.*

Engine, (en'jin). [L. *ingenium*, cleverness] Any mechanical contrivance, or combination of machinery; sometimes used specially for steam engine. *Steam E.*: a machine for utilising and applying the expansive power of steam.

Engineering, (en-jin-ē'ring). [Engine, *q.v.*] The art of applying machinery, and constructing large works of any kind. *Civil E*: the art of constructing bridges, docks, and public works generally.

English bond. *v* Bond.

Engraulis=Anchovy, *q v.*

Engraving, (en-grā'ving). [*Graver*, the French word] 1. The art of cutting figures on wood, metals, gems, &c., for ornament. 2. The same on metal plates for printing from. *Wood E.*=Wood-cutting, *q v.*

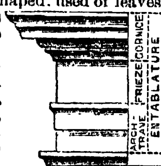
Enharmonic, (en-hȧr-mon'ik). [Harmonic, *q.v.*] *E. scale*: one proceeding by small intervals, such as quarter tones. *E. interval*: a small interval, such as between D sharp and E flat, or A sharp and B flat.

Enif=E. Pegasi: a star in the constellation Pegasus

Enneoctonus. E collurio=Red-backed shrike.

Ensiform, (en'si-form). [L. *ensis*, sword; *forma*, form] Sword-shaped: used of leaves, bones, and processes generally, that are more or less sword-shaped.

Entablature, (en-tab'la-tūr). The horizontal portion of an order, *q v.*, including cornice, frieze, and architrave, which is supported by the columns.



Entablature.

Entellus = Semnopithecus: the sacred monkey of the Hindoos, found only in S. Asia.

Enteric, (en-ter'ik). [Gk. *enteron*, intestine.] Connected with the intestines.

Entomoid, (en'to-moid). [Gk. *entomon*, insect; *eidos*, form.] Insect-like: having the form of an insect.

Entomolite, (en-tom'ō-līt). [Gk. *entomon*, insect, *lithos*, stone.] A general term for a fossil insect.

Entomology, (en-to-mol'o-ji). [Gk. *entomon*, insect: *logos*, discourse.] The science of insect life. *v*, Zoology.

Entomophaga, (en-tom-of'a-ga). [Gk. *entomon*, insect; *phago*, I eat.] 1. An extensive and varied division of Marsupialia, feeding on insects.

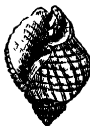
= { Ambulatoria=Thyrmecobius.
Saltatoria=Perameles, &c, *q.v.*
Scansoria=Didelphis, *q.v.*

Represented by the kangaroo. 2. A subdivision of Hymenoptera, whose larvæ are parasitic within other insects.

Entomophilous flowers, (en-tō-mof'i-lus). [Gk. *entomon*, insect; *phyllon*, leaf.] A term used for those flowers of which the pollen is carried by insects from the male to the female flowers.

Entomostomata, (en-tō-mos-tō'ma-ta). [Gk. *entomos*, cut into, *stoma*, mouth.] Used by De Blainville for a sub-division of Mollusca, nearly co-extensive with Buccinidæ, the mouths of the shells of which are notched.

Entomostraca, (en-tō-mos'tra-ka). [Gk. *entomon*, insect, *ostrakon*, shell.] Insects having a shelly covering, the lower Crustaceans, the only fossil remains of these are carapace valves.



Entomostraca.

Entomotomy,(en-tō-mot'-o-mi). [Gk *entomon*, insect: *temno*, I cut.] =Anatomy of insects. *v.* Zootomy.

Entomoza=Anellata: a term used by Milne-Edwards, *q.v.*

Entomozoaria, (en-tom-o-zō-ā'ri-a). [Gk. *entomos*, cut; *zoon*, animal.] Term used by De Blainville for Articulata.

Entophyta, (en-tof'i-ta). [Gk. *entos*, within; *phytos*, planted.] Lower algæ or fungi, parasitic within animals. *cf* Epiphyte.

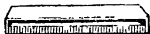
Entozoa, (en-tō-zō'a). [Gk. *entos*, within, *zoon*, animal.] Animals parasitic within other animals. *cf.* Epizoa. *v.* Parasites.

Entozoon, (en-tō-zō'on). [Gk. *entos*, within; *zoon*, animal.] Singular of Entozoa, *q v.*

Entrochites, (en-trō-ki'tēz) [Gk. *en*, in; *trochos*, wheel.] Fossil joints of Encrinites, wheel-like in form.

Eocene, (ē'ō-sēn). [Gk. *eos*, dawn; *kainos*, recent]=Lower Tertiary: in which existing species of Testacea are first found, and in which they form a small proportion of the whole.

Eolian harp, (ē-ō'li-an). [*Æolus*, god of the winds.] A small stringed instrument, placed so that air is forced through it, and causes the strings to vibrate.



Eolian harp

Eolipyle, (ē-ol'i-pīl). [L. *Æolus*, god of winds; *pila*, ball.] A hollow metallic sphere, having two arms turned contrariways, and filled with water. When heated, the steam issues from apertures at the ends of the arms, and by its reaction causes the rotation of the sphere upon two pivots which support its weight.

Eolis, (ē'o-lis). A molluscous animal, belonging to Gasteropoda, having nematocysts

Eopitheous, (ē-ō-pi-thē'kus). [Gk *eos*, dawn; *pithekos*, ape.] A monkey, known only by fossil remains.

Eosaurus, (ē-ō-saw'rus). [Gk *eos*, dawn; *saura*, lizard] An animal, probably a reptile of aquatic habits, known only by fossil remains of two vertebræ, found in the Coal Period.

Eosite, (ē'ō-sīt). A mineral; a compound of lead, molybdenum, and vanadium.

Eozoic, (ē-ō-zō'ik). [Gk. *eos*, dawn; *zoe*, life] The oldest fossiliferous rocks, formerly called Azoic and Hypozoic.

Eozoon, (ē-ō-zō'on). [Gk. *eos*, dawn; *zoon*, animal.] *E Canadense:* found in Lower Laurentian, a perforate Foramifer or Foraminifera. The oldest fossil known, belongs to the highest family of the lowest class of animals. *v.* Rhizopoda.

Eozoonal rock, (ē-ō-zō'on-al). [Eozoon, *q.v.*]= Liassic, *q v.*

Epacridaceæ, (e-pak-rid-ā'se-ē). [Gk *epi*, upon; *akros*, point.]=Epacrids: shrubs and trees, with monopetalous flowers, belonging to Ericales.

Epact, (ē'pakt) [Gk. *epaktos*, added to] Number expressing the age of the moon on the 1st day of any year of the Metonic Cycle; being the difference between the termination of the solar and lunar years.

Epaulement, (ē-pawl'ment). [F. *epaule*, shoulder] A temporary earthwork, intended as a flank protection against fire of musketry, &c

Epaxial. (ep-aks'i-al). [Gk. *epi*, upon; Axis, *q v.*] Outgrowth of the vertebral axis. *E. arches* bony or cartilaginous processes of the back-bone, enclosing the spinal marrow, in some vertebrata only, not in man. *E. cartilages* · surrounding the neural canal.

Epencephalic, (ep-en-se-fal'ik). [Gk *epi*, upon; Encephalon, *q v*]=Occipital: belonging to the back of the cranium.

Ependema. A delicate layer of epithelium lining the cavity of the cerebro-spinal axis.

Ephemeræ, (ef-em'er-ē). [Gk. *ephemeros*, transient]=May Flies, *q.v.*

Ephemeridæ, (ef-em er'i-dē). [Gk. *epi*, upon; *hemera*, day]=Day Flies: insects, belonging to Orthoptera, which have no mouths, and live but a few hours, also called Ephemera.

Ephemerides, (ef-em-er'i-dēz). [Ephemeris, *q.v.*] An astronomical diary, giving the positions, &c., of any given stars, &c.

Ephemeris, (ef-em'er-is). [Gk. *ephemeros*, transient.] An astronomical diary. Singular of Ephemerides, *q.v.*

Ephemeromorphs, (ef-em'er-o-morfs). [Gk. *ephemeros*, transient; *morphe*, form] A term used for the lowest forms of animal life, such as Bacteria, Torulæ, &c.

Ephialtes, (ef-i-al'tēs). *E. scops:* scops-eared owl.

Ephippus, (ef-ip'pus). A fish belonging to Chætodon, *q.v.*

Ephthiamura, (ef-thi-a-mū'ra). An Australian bird of the wagtail kind.

Ephyræ. 1. Detached segments of hydra tubes, often very large, the ova of which become hydra tubes. 2. A stage of Rhizostomidæ: separated discs which become medusæ.

Epiblast, (ep'i-blast) [Gk. *epi*, upon; Blastoderm *q.v.*] The outer layer of Blastoderm, *q.v.*

Epi, (ep'i). [Gk. *epi*, upon.] A prefix meaning upon.

Epicarp, (ep'i-kārp). [Gk *epi*, upon; *karpos*, fruit.] The outward layer of the pericarp.

Epicotyledones, (ep-i-kot-ĭ-le'donz) [Epi and Cotyledon, *q.v.*] Van Beneden's term for Insects, Myriapoda, Arachnida, and Crustaceae.

Epicrium. A snake-like reptile, belonging to Ophiomorpha, found only in Asia.

Epicycle, (ep-i-sī'kl). [Gk. *epi*, upon; *kyklos*, circle.] A small circle revolving upon the circumference of a larger circle.

Epicycloid, (ep-i-sī'kloid). [Epi and Cycloid, *q.v.*] A curve traced by a point in the circumference of one circle which is rolling upon the convex arc of another circle.

Epicyclic trains, (ep-i-sī'klik). [Epicycle, *q.v.*] A number of wheels attached to a rotating bar, from the revolutions of which they derive their motion.

Epidemic, (ep-i-dem'ik). [Gk. *epi*, upon; *demos*, people.] Diseases prevailing amongst numbers of persons at the same time. *cf.* Endemic.

Epidermal, (ep-i-der'mal). [Epidermis, *q.v.*] =Epidermic: connected with, or related to, the epidermis.

Epidermis, (ep-i-der'mis). [Epi and Dermis, *q.v.*] The outer tough layer of skin, composed of horny matter, which contains no blood-vessels, and is continually being worn away and replaced.

Epidermose, (ep-i-der'mōs). [Epidermis, *q.v.*] =Epidermal, *q.v.*

Epidote. (ep'i-dōt). [Gk. *epididomi*, I add to.] A mineral of the garnet group, a silicate of alumina and lime.

Epigee, (ep'i-gē). [Gk. *epi*, upon; *ge*, earth.] *v.* Perigee.

Epigenesis, (ep-i-jen'e-sis). [Epi and Genesis, *q.v.*] A method of reproduction, in which the individual is supposed to grow rather than to develop: opposed to Evolution, *q.v.*

Epigenite, (ep'i-jen-it). A mineral, chiefly sulphide of iron and copper.

Epiglottis, (ep-i-glot'tis). [Epi and Glottis, *q.v.*] The gristly covering of the glottis, *q.v.*

Epigynous, (e-pij'i-nus). [Gk. *epi*, upon; *gyne*, woman.] Having calyx, corolla, and stamens all adhering to ovary, and the ovary consequently inferior.

Epihyal, (ep-i-hī'al). [Epi and Hyoid, *q.v.*] A bone of the hyoid arch in fishes.

Epilobium, (ep-i-lō'bi-um). [Gk. *epi*, upon; *lobos*, lobe.]=Willow-herb: an herb belonging to Onagraceæ.

Epimachus, (e-pim'a-kus). [Gk. *epimachus*, defenceless.]=Plume birds.

Epiornis=Æpiornis, *q.v.*

Epiotic, (ep-i-ot'ik). [Gk. *epi*, upon: *ous*, ear.] The upper bone of the auditory capsule in the ear.

Epipactis, (ep-i-pak'tis)=Helleborine, an herb belonging to Orchidaceæ.

Epipastics, (ep-i-pas'tiks). [Gk. *epipasso*, I moisten.]=Vesicatory: raising blisters

Epiphlœum, (ep-i-flē'um). [Gk. *epi*, upon; *phloios*, bark.]=Corky-bark: the outermost of the three layers, of which bark is usually composed.

Epiphragm, (ep'i-fram). [Gk. *epi*, upon; *phragma*, fence.] The barrier of hardened mucus with which snails, &c., close the orifice of their shells.

Epiphysis, (e-pif'i-sis). [Gk. *epi*, upon; *phyo*, I grow.] Any process or projecting portion, especially of a bone.

Epiphyte, (ep'i-fīt). [Gk. *epi*, upon; *phytos*, planted.] A plant attached to another plant, but not growing at its expense. *v.* Orchidaceæ. *cf.* Parasitic plants.

Epiphytic, (ep-i-fit'ik). [Epiphyte, *q.v.*] Having the qualities of, or being related to, epiphytes.

Epipodia, (ep-i-pō'di-a). [Gk. *epi*, upon; *pous*, foot.] Lobes upon the feet of some Gasteropoda.

Epipodite, (ep'i-pod-īt). [Gk. *epi*, upon; *pous*, foot.] The external distal segment of the limb of a crustacean animal.

Epistome, (ep'is-tōm). [Gk. *epi*, upon; *stoma*, mouth.] A valve-like organ, arching over the mouth in some Polyzoa.

Epistylion, (ep-is-tī'li-on). [The Greek word.] =Architrave, *q.v.*

Epithelium, (ep-i-thē'li-um). [Gk *epi*, upon; *thelys*, soft flesh.] The modified epidermis which forms the outer layer of the mucous membrane.

Epitricha. A sub-division of Infusoria. *v.* Hoeven.

Epizoa, (ep-i-zō'a). [Gk. *epi*, upon; *zoon*, animal.]=Haustellata: parasitic crustacea, with suctorial mouths; free when young, parasitic when adult.

Epizoon, (ep-i-zō'on). [Gk. *epi*, upon; *zoon*, animal.] Singular of Epizoa, *q.v.*

Epizootic diseases, (ep-i-zo-ot'ik). [Epizoa, *q.v.*] Sheep-pox, glanders, &c.: diseases to which cattle are subject. *cf.* Epidemic.

Epoch, (ē'pok). [*Epoche*, the Greek word.] 1. Any time from which dates are counted: any remarkable event which is taken as a standard in chronology. 2. In astronomy, the position of a star at a given date.

Epsom salts. [First found in springs at Epsom.]=$MgSO_4$=Magnesic sulphate.

Epsomite, (ep'som-it). A mineral, chiefly sulphate of magnesium.

Equation, (ē-kwā'shun). [L. *æquatio*, a making equal.] The expression of equality: Ex. $1+5=4+2$. *Binomial E.* $=x^n-A=0$. *v.* Binomial. *Biquadratic E.* $=x^4+px^3+qx^2+rx+s=0$. *Cubic E.* $=x^3+ax^2+bx+c=0$. *Quadratic E.* $=x^2+px+q=r$. If the unknown quantity occur in only the first power, x, the equation is *simple;* if in the second power, x^2, it is quadratic; if in the third power, x^3, it is cubic; in the fourth power, x^4, it is biquadratic. *E. of a circle*: $(x-h)^2+(y-k)^2=a^2$, in which a=radius; hk=centre; xy=any given point. *E. of a line*: $Ax+By=C$, x and y being the co-ordinates, *q.v.* *E. of time*: the time to be added to, or subtracted from, the time shown by a sun-dial, to find the correct time.

Equator, (ē-kwā'tor). [L. *æquatio*, a making equal.] An imaginary line drawn on the surface of the earth, midway between the poles, so as to divide its surface equally. *Magnetic E.*, a line approximating to a great circle of the earth, also called Aclinic line, *q.v.*

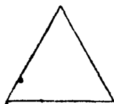
Equatorial, (ē-kwā-tō′ri-al). [Equator, *q.v.*] A telescope so mounted that a star, &c., may be followed by it from rising to setting: the telescope moving regularly and continuously

Equi-, (ē′kwi). [L. *æquus*, equal.] A prefix meaning equal.

Equidæ, (ē′kwi-dē). [Equus, *q.v.*] Horse, ass, zebra, &c.: a division of Ungulata, *q.v.*

Equilateral, (ē-kwi-lat′er-al). [L. *æquus*, equal; *latus*, side.] Having equal sides.

Equilibrium, (ē-kwi-lib′ri-um). [L. *æquus*, equal; *libra*, balance.] A state of rest, arising from the equality of two opposite and equal forces. *Neutral E.*: in which a body may be moved without either raising or lowering its centre of gravity. *Stable E.*: when the body, after a slight disturbance, would return to its original position. *Unstable E.*: when a slight disturbance would suffice to alter its position permanently by lowering its centre of gravity.


Equilateral.

Equine, (ē′kwin). [L. *equus*, horse.] Relating to horses.

Equinox, (ē′kwi-noks), [*Æquinoctium*, the Latin word.] When day and night are equal all over the world; when the earth is at one of the two points at which the equator and ecliptic coincide. *Vernal E.*: 22nd March. *Autumnal E.*: 22nd September. *Spring E.* =Vernal E.

Equinoctial, (ē-qwi-noks′i-al). [Equinox, *q.v.*] =Celestial equator: the great circle of the heavens lying in the plane of the earth's equator.

Equisetaceæ, (ē-kwi-sē-tā′se-ē). [L. *equus*, horse, *seta*, hair.]=Horsetails: leafless aquatic plants, in rivers and ditches, belonging to Muscales.

Equisetic acid, (ē-kwi-sē′tik). [Equisetum, *q.v.*]=Aconitic acid, *q.v.*

Equisetites, (ē-qui-sē′titz or ē-qwi-se-tī′tēz). [Equisetaceæ, *q.v.*] Fossil plants in coal, belonging to Equisetaceæ.

Equisetum, (ē-kwi-sē′tum). [L. *equus*, horse; *seta*, bristle.] The only genus of Equisetaceæ. A marsh plant, found fossil in Lias rocks. *E. fluviatile*=Chara.

Equivalency, (ē-kwiv′a-len-sy). [Equivalent, *q.v.*] In chemistry=Atomicity, *q.v.*

Equivalent, (ē-kwiv′a-lent). [L. *æquus*, equal; *valeo*, I am strong.] The relative quantities of substances which may be substituted for one another in similar chemical compounds.

Equivocal generation, (ē-kwiv′o-kal). [L. *æquus*, equal; *vocalis*, speaking.] = Spontaneous generation, *q.v.*

Equuleus, (ē-kwi-ul′e-us). [The Latin name.] =The Little Horse: a small northern constellation.

Equus, (ē′kwu-us). [The Latin name.]= Horse: a domesticated quadruped, belonging to Equidæ, *q.v.*

Eranthis, (e-ran′this). [Gk. *eros*, spring; *anthos*, flower.]=Winter aconite: a small herb belonging to Ranunculaceæ.

Eratosthenes, (er-a-tos′the-nēz). [Classical.] A lofty crater in the moon, 38 miles in diameter, surrounded by mountains.

Erbia, (er′bi-a). [Erbium, *q.v.*]=EO: the oxide of erbium, a rare earth.

Erbium, (er′bi-um).=E: very rare, one of the earth-metals.

Erdshrew, (erd′shrū). [Gk. *erd*, earth; Shrew, *q.v.*] Shrew-mouse, *q.v.*

Eremacausis, (ē-re-ma-kaw′sis). [Gk. *eremos*, gently; *kausis*, burning.] Slow combustion, such as rusting of iron, produced by the action of the oxygen of the atmosphere.

Erethizon, (ē-reth′i-zon). [Gk. *erethizo*, I provoke.] *E. dorsatum*=Canadian porcupine

Erg, (erg). [Gk. *ergon*, work.] Proposed by Everett as the unit of energy relative to the foot, pound, and second.

Ergot, (er′got). [The French word.] A black fungoid body secreted within the floret of grasses, especially of Rye=Puccinia graminis.

Erian. Used by Dawson as equivalent to Devonian

Erica, (e-rī′ka). [*Erice*, the Latin name.]= Heath: a shrub, the type of Ericaceæ, *q.v.*

Ericaceæ, (e-ri-kā′se-e). [Erica, *q.v.*]=Heathworts: balsamic shrubs and trees, with leathery leaves, belonging to Ericales.

Ericales, (e-ri-kā′lēz). [Erica, *q.v.*] Plants, with dichlamydeous flowers, having an embryo with much fleshy albumen, forming a division of Hypogynous Exogens.

Ericinol, (e-rī′si-nol). [Erica, *q.v.*]=$C_{10}H_{16}O$: A green oil obtained from ericolin

Ericolin, (e-rī′ko-lin). [Erica, *q.v.*]=$C_{34}H_{56}O_{21}$: A resinous substance obtained from ericaceous plants.

Ericson's propeller. A variety of the screw-propeller, in which a number of blades are fitted on the surface of a hollow drum.

Eridanus, (ē-rid′a-nus). [Classical.] = The river Eridanus: a southern constellation of large size, but with few large stars, Achernar being the chief.

Erinaceidæ, (ē-rin-ā′si-dē) [Erinaceus, *q.v.*] Owen's term for animals such as the hedgehog.

Erinaceus, (ē-rin-ā′se-us) [The Latin name.] =Hedgehog: an animal, belonging to Insectivora, remarkable for having its back covered with prickly spines.

Erinite, (er′i-nit). A mineral containing copper.

Eriocaulaceæ, (e-ri-o-kaw-lā′se-ē). [Eriocaulon, *q.v.*]=Pipe-worts: marshy plants, with small flowers, belonging to Glumales.

Eriocaulon, (e-ri-o-kaw′lon). [Gk. *erion*, wool, *caulon*, a stem.]=Pipe-wort. a tropical plant belonging to Eriocaulaceæ, of which it is the type.

Eriometer, (e-ri-om′e-ter). [Gk. *erion*, wool; *metron*, measure.] An apparatus for measuring the diameter of fine fibres.

Eriophorum, (e-ri-of′o-rum). [Gk. *erion*, wool; *phoreo*, to bear.]=Cotton-grass: herbs belonging to Cyperaceæ, named from the cotton-like fibres in the fruits.

Ermine, (ẽr'min). [*Hermine*, the French name.] = Mustella erminea: a small weasel-like animal belonging to Mustelidæ, *q.v.* *E. moth* = Yponomeuta padella: a social insect.


Ermine

Erodium, (e-rō'di-um). [Gk *erodios*, heron.] = Stork's bill: an herb, belonging to Geraniaceæ, named from the form of the fruit.

Erophila, (e-rof'i-la) [Gk. *er*, the spring; *philo*, I love.]=Vernal whitlow grass: a small herb, belonging to Brassicaceæ, named from flowering in the spring.

Erpetology, (ẽr-pet-ol'o-ji.) [Gk. *herpeton*, serpent, *logos*, discourse.]=Herpetology, *q v.*

Errantia, (er-ran'shi-a). [L. *erro*, I wander.] Sea-mice, Sea-worms, &c.: free annelides, belonging to Chætophora, named from being capable of active movement.

Ersbyite, (ẽrs'bi-it). A mineral, chiefly silicate of aluminum and calcium.

Erubescite, (er-u-bes'īt.) [L *erubesco*, I grow red.] One of the copper group of minerals, crystallising in cubes, chiefly sulphide of copper and iron, named from its iridescence.

Eruca, (e-rū'ka). [L. *uro*, I burn.]=White mustard=Sinapis alba, *q.v.*: an herb belonging to Brassicaceæ.

Erucic acid, (e-rū'sik). [Eruca, *q v.*]=$C_{22}H_{42}O_2$: an acid of the oleic series, obtained from oil of mustard.

Erycinidæ, (e-ri-si'ni-dē). [L.*Erycina*, Venus.] A family of butterflies.

Eryngium, (e-rin'ji-um.) [Gk. *eryngion*, a thistle.]=Eryngo. an herb, belonging to Apiaceæ, named from its use in medicine.

Eryon. A trilobite found in Lias.

Erysimum. (e-ris'i-mum). [Gk *eruo*, I draw.] =Treacle mustard. an herb, belonging to Brassicaceæ, named from its use in causing blisters.

Erythracus, (e-ri-th'ra-kus). [Gk. *erythros*, red.] E. rubecula=Redbreast

Erythræa, (e-ri-thrē'a). [Gk. *erythros*, red.]= Centaury: an herb, belonging to Gentianaceæ, named from the usual colour of the flowers

Erythric acid, (e-rith'rik). [Gk. *erythros*, red.] =$C_{28}H_{30}O_{14}$=Di-orsellic ether of erythrite: an acid substance found in lichens.

Erythrin, (er'i-thrin). [Gk. *erythros*, red.]= Erythric acid, *q v.*

Erythrine, (er'i-thrin). [Gk. *erythros*, red.] Cobalt bloom=Erythrite, *q v.*

Erythrite, (er'i-thrit) [Gk *erythros*, red.]=1. Psuedo-orcin=$C_4H_{10}O_4$: a tetratomic alcohol obtained from the litmus lichen. 2 Erythrine: cobalt bloom, a mineral of the cobalt group, with oblique crystallization, chiefly arseniate of cobalt 3 A variety of felspar.

Erythronium, (e-rith-ro'ni-um)=Vanadate of lead

Erythromannite=$C_4H_{10}O_4$: a crystalline substance: also called Erythroglucin, Erythrite, and Pseudorcin.

Erythrophyll, (e-rith'ro-fil). [Gk *erythros*, red; *phyllon*, leaf.] A crimson colouring matter found in leaves.

Erythrose, (er'i-thrōs). [Gk. *erythros*, red.] An orange dye-stuff obtained from rhubarb.

Erythroxylaceæ, (e-rith-roks-i-lā'se-ē) [Gk. *erythros*, red; *xylon*, wood.]=Erythroxyls: trees and shrubs, chiefly S. American, belonging to Sapindales, named from the colour of the wood.

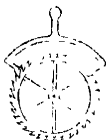
Erythroxyline, (e-rith-roks'i-līn). [Gk. *erythros*, red; *xylon*, wood.] A crystalline substance obtained from Erythroxylon coca

Erythrozyme, (e-rith'ro-zim). [Gk. *erythros*, red.] A nitrogenous substance found in madder root.

Eryx, (ē'riks). [Classical.] 1 In the moon, *q.v.* 2. A reptile belonging to Ophidia, *q v.*

Escalloniaceæ, (es-kal-lon-i-ā'se-ē) [Signor Escallon.]=Escallonads: shrubs, with evergreen, resinous leaves and showy flowers, belonging to Grossales

Escapement, (es-kāp'ment). [F *echapper*, to escape.]=Catch: a crank which regulates the motion of the chief or escapement-wheel of a train of clock-work worked by the pendulum or spring *E. valve*, *v.* Valve. *E. wheel*, *v.* Escapement.


Escapement

Escarp, (es-kārp'). [*Escarpe*, the French word.]=Scarp: a steep slope forming part of a cliff or of a fortification.

Escarpment, (es-kārp'ment) [Escarp, *q v.*] 1. A cliff resulting from subaerial denudation. 2 An artificial cliff formed by cutting away ground so as to form a slope

Eschara. A bryozoan, from Palæozoic rocks, still extant.

Escharotics, (es-ka-rot'iks). [F *escarotique*, caustic.] Nitrate of silver, caustic potash, chloride of antimony, &c.: substances which burn the flesh.

Escherite, (es'ker-īt). A variety of Epidote, *q.v.*

Esculetin, (ēs-kū'le-tin). [Esculin, *q.v.*]= $C_9H_6O_4$: a crystalline substance, of feebly-acid properties, obtained from esculin.

Esculic acid, (ēs-kū'lik). [Æsculus, *q.v*]= Saponic acid, *q.v.*: an acid substance obtained from Saponin.

Esculin, (ēs-kū'lin). [Æsculus, *q.v.*]=Polychrome=$C_{21}H_{24}O_{13}$: a glucoside substance obtained from the bark of the horse-chestnut =Æsculin, *q v.*

Eserine, (es'ẽr-in). An alkaline base from which blue dye is obtained.

Esexuales, (e-seks-u-ā'lēz). [L. *e*, without; Sexual, *q.v.*] Ferns, Mosses, Fungi, &c a term used by Lindley for plants in which the distinction of sex is not evident.

Esocidæ, (ē-sos'i-dē). [Esox, *q v.*]=Pikes: a family of fishes belonging to Telostei. The flying fish belongs to this order.

Esoteric, (es-ō-ter'ik). [Gk. *esoterikos*, internal.] Internal: secret. *cf.* Exoteric.

Esox, (ē'soks). [The Latin name.] Pike: the type of Esocidæ.

Esplanade, (es-pla-nād'). [The French word.] An open space adjoining a fortification or enclosed by it.

Esquimaux, (es'ki-mō). A race of people inhabiting Arctic America and Greenland.

Essence, (es'sens). [*Essentia*, the Latin word.] The concentrated material of any substance, purified from all other matters, often found as a hydrocarbon, and called an essential oil, *q.v.*, also with oxygen or sulphur as a constituent. *E. of camomile*=C_5H_8. *E. of garlic* =$(C_3H_5)_2S$. *E. of melons*=An ethyl compound of an acid of cocoa-nut oil. *E. of quinces*=$C_{11}H_{22}O$, &c.

Essential oils, (es-sen'shi-al). [Essence, *q.v.*] —Volatile oils, usually the distinctive compound of the plant whence obtained, harsh-feeling, inflammable oily substances, usually liquid, and lighter than water, composed of *stearopten*, a solid, and *elaopten*, a liquid.

Etching, (ech'ing). [*Atzung*, the German word.] A method of engraving on metal or glass by exposing it to the vapour of fluoric acid [illegible] to eat it away. The plate [illegible] by a coating of wax through which the pattern is cut.

Etesian wind, (e-tē'zi-an). [illegible] N.E. [illegible] blowing in the Mediterranean.

Ethacetic acid, (e-tha-[illegible]). [illegible] Cetic.]=C_4H[illegible]O. Butyric acid, *q.v.*

Ethal, (ē'thal). [The French name.] =[illegible] = **Cetyl** alcohol, a [illegible], obtained from spermaceti.

Ethalic acid, (e-thal'ik). [Ethal, *q.v.*]=$C_{16}H_{32}O_2$=Palmitic acid, *q.v.*

Ethalone, (ē'tha-lōn). [Ethal, *q.v.*]=Palmitone, *q.v.*, also called Cetylene.

Ethalol. Cetene, *q.v.*

Ethalyl, (ē-thal-il). [Ethal, *q.v.*]=Cetyl, *q.v.*

Ethamine, (e'tha-mīn)=Ethylamine, *q.v.*

Ethene, (e'thēn)=C_2H_4=Ethylene, *q.v.*

Ethenides=Primary Nuclei.

Ether, (ē'ther). [The French word.] 1.=$(C_2H_5)_2O$=Vinic ether=Ethylic ether=Sulphuric ether=Alcohol-Water=Oxide of ethyl: a colourless, volatile, very inflammable liquid obtained by action of sulphuric acid on alcohol, formerly much used as an anæsthetic. 2. A hypothetical fluid of infinite thinness, the vibrations of which cause the sensation of light. *v.* Luminiferous ether. *Compound E.*=Ether+an anhydrous ether=Ammoniacal salts. *Double E.*=Mixed ethers, *ex.* Methyl-amyl ether=CH_3,C_5H_{11},O.

Ethers, (ē'therz). [Ether, *q.v.*]=$(C_nH_{2n+1})_2O$: volatile liquids=Compounds of alcoholic radicles, with electro-negative radicles. *Simple E.*=Oxides of organic radicles. *Compound E.*=Salts of organic radicles. *Haloid E.*=Compounds of organic radicles with chlorine, bromine, iodine, &c.

Ethereal salts, (e-thē're-al). [Ether, *q.v.*]=Compound ethers, *q.v.*

Etherene, (ē'ther-ēn). [Ether, *q.v.*]=Ethylene, *q.v.*

Etherification, (ē-ther-if-i-kā'shun). [Ether, *q.v.*; L. *facio*, I make.] Conversion of an alcohol into an ether.

Etherin. A crystalline substance obtained from heavy oil of wine.

Etherol, (ē'ther-ol). [Ether, *q.v.*]=$C_{16}H_{32}$=Light oil of wine.

Ethine, (ē'thīn). [Ether, *q.v.*]=Acetylene, *q.v.*

Ethionic, (ē-thi-on'ik). [Ether, *q.v.* and Gk. *theion*, sulphur.] Compounded of ether and sulphuric acid. *E. anhydride*=$C_2H_4 2SO_3$=Sulphate of carbyle. *E. acid*=$C_2H_6S_2O_7$.

Ethiops mineral, (ē'thi-ops). [Gk. *aitho*, I burn, *ops*, eye]=Hg_2S=Mercurous sulphide, named from its black colour.

Ethmoid, (eth'moid). [Gk. *ethmos*, sieve, *eidos* form.] A complex sieve-like bone, between the skull and the face, through orifices in which the olfactory nerve goes to the nose.

Ethnical, (eth'ni-kal). [Gk. *ethnos*, race.] Connected with ethnology.

Ethnography, (eth-nog'ra-fi). [Gk. *ethnos*, race, *grapho*, I write.] The description of the various races of mankind.

Ethnology, (eth-nol'o-ji). [Gk. *ethnos*, race, *logos* discourse.] The science of the various races of mankind.

Ethnologist, (eth-nol'o-jist). [Ethnology, *q.v.*] A student of ethnology.

Ethyl, (ē'thil). [Ether, *q.v.*]=$(C_2H_5)_2$=Et.=[illegible]=Butyl hydride. The radicle of ether=An odorous inflammable gas, acting as a compound radicle; also called Quartane and Deutylen. *E. acetate*=Acetic ether. *E. alcohol*=C_2H_6O=Alcohol, *q.v.* *E. cacodyl*=Arsendiethyl. *E. carbamides*=Ethylureas, *v.* Urea. *E. ether*=$(C_2H_5)_2O$=E. oxide=Ether, *q.v.* *E. oxide*=E. ether, *q.v.*

Ethylamine, (e-thil'a-mīn). [Ethyl and Amine, *q.v.*]=C_2H_7N: A transparent colourless liquid: ammonia, in which one-third of the hydrogen has been replaced by ethyl; also called Ethylamide and Ethylammonium.

Ethylene, (ē'thi-len). [Ethyl, *q.v.*]=C_2H_4=Olefiant gas=Elayl=Ethene. A combustible gas, forming one of the chief elements of coal gas, the representative of the olefines. *E. series*=Olefines, *q.v.*

Ethylenia, (e-thi-lē'ni-a). [Ethylene, *q.v.*]=$(C_2H_4)H_4N_2$=Ethylene diamine, a base obtained from ethylene compounds=Formylia.

Ethylia, (ē-thil'i-a). [Ethyl, *q.v.*]=$(C_2H_5)H_2N$=Ethylamine, *q.v.*: the vapour of which is inflammable; one of the primary monamines. *Di-E.*=$(C_2H_5)_2HN$. *Tri-E.*=$(C_2H_5)_3N$.

Ethylic, (e-thil'ik). [Ethyl, *q.v.*] Connected with ethyl.

Etiolate, (ē'ti-ō-lāt). [F. *etioler*.] To blanch or whiten plants by shutting out the light of the sun.

Etruscan, (ē-trus'kan). [Etruria, the ancient name of Tuscany.] Belonging or related to the province of Italy now called Tuscany.

Eucalyn, (ū'ka-lin). [Eucalyptus, *q.v.*]=$C_6H_{12}O_6$: a saccharine substance obtained from eucalyptus.

Eucalyptol, (u-kal-ip'tol). [Eucalyptus, *q.v.*]=$C_{12}H_{20}O$: An oil obtained from eucalyptus.

Eucalyptus, (ū-ka-lip'tus). [Gk. *eu*, well; *kalypto*, I cover.] An Australian plant be-

longing to Myrtaceæ. *E. globulus* = Blue gum tree.

Eucalyptocrinus, (ū-ka-līp-tō-krī'nus). [Gk. *eu*, well; *kalyptos*, covered, *krinon*, lily.] A fossil belonging to Crinoidea.

Euchlorine, (u'klō-rin). [Gk. *eu*, well, Chlorine, *q.v.*] A compound of chlorine and oxide of chlorine.

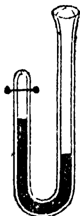
Euchroic acid, (ū-krō'ik) = $C_{12}H_4N_2O_8$: a crystalline acid substance.

Euchroite, (ū-krō'it). A mineral, chiefly arsenate of copper.

Euclase, (ū'klās). [The French name.] A mineral, chiefly silicate of aluminum and glucinum: also called Prismatic Emerald.

Eudialyte, (ū'di-a-līt). [Gk. *eudialytos*, soon dissolved.] A mineral, chiefly silicate of zirconium, sodium, and calcium.

Eudiometer, (ū-di-om'e-tęr). [Gk. *eudia*, calm weather; *metron*, measure.] An apparatus for the measurement of gases.


Eudiometer.

Eudiometry, (ū-di-om'e-tri). The measurement of gases.

Eudoxus, (ū-doks'us). A crater, 46 miles diameter, one of the grandest in the moon.

Eugenic acid, (ū-jen'ik) = $C_{10}H_{12}O_2$. an oil; also called Eugenol and Caryophyllic Acid.

Eugenin, (ū'jen-in). A white luminous substance obtained from cloves: also called clove camphor.

Euglenæ, (ū'glen-ē) = Ciliated infusoria.

Eugnathus, (ūg-na'thus). [Gk. *eu*, well; *gnathos*, jaw.] A Liassic fish belonging to Lepidoganoidei.

Eukolyte, (ū'ko-līt). A mineral, probably = Eudialyte, *q.v.*

Euler's theorem of consonance. That it is the pleasure derived from the easy perception of order.

Eulyte, (ū'līt) = $C_6H_6N_4O_7$: a crystalline substance obtained from citraconic acid.

Eulytin, (ū'lī-tin) = Bismuth blende. *v.* Blende.

Eumenidæ, (ū-men'i-de) = Solitary wasps.

Euomphalus, (ū-om'fa-lus). [Gk. *eu*, well; *omphalos*, navel.] A Gasteropod, often of large size, with whorled shell bosses, found in Palæozoic strata.

Euonymite, (ū-on'i-mīt). [Euonymus, *q.v.*] = $C_6H_{14}O_6$: a saccharine substance obtained from the spindle tree.

Euonymus, (ū-on'i-mus). [Gk. *euonymos*, of good fame.] = Spindle tree: a shrub or tree, with poisonous berries, belonging to Celastraceæ.

Euosmite, (ū'os-mīt). [Gk. *eu*, well; *osme*, smell.] A fossil resin found in beds of lignite.

Eupatorium, (ū-pa-tō'ri-um). = Hemp agrimony: an herb belonging to Asteraceæ.

Euphorbia, (u-for'bi-a). [Gk. *euphorbia*, fertile.] = Spurge: an herb belonging to Euphorbiaceæ.

Euphorbiaceæ, (ū-for-bi-ā'se-ē). [Euphorbia, *q.v.*] Herbs, shrubs, and trees, sometimes with milky sap, mostly poisonous, belonging to Euphorbiales.

Euphorbiales, (ū-for-bi-ā'lēz). [Euphorbia, *q.v.*] Plants with scattered flowers, and embryo with abundant albumen, forming a division of Diclinous Exogens.

Euphorbium, (ū-for'bi-um). [Euphorbia, *q.v.*] A resin obtained from Euphorbia.

Euphoria, (ū-fō'ri-a), a plant belonging to Sapindaceæ.

Euphrasia, (ū-frā'si-a). [Gk. *euphraino*, I delight.] = Eyebright: a parasitic herb belonging to Scrophulariaceæ.

Euphyllite, (ū'fil-līt). [Gk. *eu*, well; *phyllon*, leaf.] A variety of mica.

Eupione. A hydrocarbon, obtained in distillation of wood, coal, &c.

Euplexoptera, (ū-pleks-op'tęr-a). [Gk. *eu*, well; *pleko*, I plait, *pteron*, wing.] = Earwigs: a term proposed by Jones to form a fresh family out of Orthoptera.

Eupoda, (ū'po-da). [Gk. *eu*, beautiful; *pous*, foot.] A primary division of beetles = Phytophaga, *q.v.*

Euroclydon, (ū-rok'li-don). [Gk. *euros*, east wind, *klydon*, wave.] A tempestuous wind common in the Mediterranean Sea.

Euryalid, (ū-rī'a-lid) = Asteronyx loveni: an echinoderm of Scandinavia.

Eurynotus, (ū-ri-nō'tus). [Gk. *eurys*, broad; *notos*, back.] A Lepidoganoid fish found in Carboniferous rocks.

Eurypteridæ, (ū-rip-tęr'i-dē). [Eurypterus, *q.v.*] Crustaceans, known only by Palæozoic fossils, often of large size.

Eurypterus, (ū-rip'tęr-us). [Gk. *eurys*, broad; *pteryx*, fin.] A Crustacean, sometimes eight feet long, belonging to Entomostraca, found in Palæozoic rocks.

Euryte, (ū'rīt). [Gk. *eureo*, to flow well]. A mineral: a fine variety of granite, which fuses easily.

Eustachian tubes, (ū-stā'ki-an). [Signor Eustachias.] Tubular passages from the ear opening into the pharynx, serving to keep the interior of the tympanum supplied with air, so as to keep the pressure on the two sides equal. *E. valve:* a rudimentary fold in the membrane of the heart.

Euterpe, (ū-tęr'pē). [Classical.] A plant. *E. oleracea* = Assai.

Euxanthic acid, (ū-ksan'thik). $C_{21}H_{18}O_{11}$ = Purreic acid, *q.v.*

Euxenite, (ū'ksen-īt). A mineral, chiefly yttria and columbic acid.

Euzeolite, (ū-zē'o-līt). [Gk. *eu*, well; Zeolite, *q.v.*] 1. A variety of Stilbite, *q.v.* 2. A variety of Heulandite.

Evansite, (ev'an-sīt). [Mr. Evans.] A mineral, chiefly hydrated phosphate of aluminum.

Evapometer, (ē-vap-om'e-tęr). [Evaporation and Meter, *q.v.*] An instrument for measuring the amount of evaporation.

Evaporation, (ē-vap-o-rā'shun). [*Evaporatio*, the Latin word.] 1. The slow conversion of a liquid into vapour, which takes place at the surface at all temperatures. 2. Driving off a solvent, in vapour, by the operation of heat.

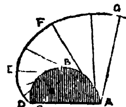
Evection, (ē-vek'shun). [*Evectio*, the Latin word.] *v.* Libration.

Evergreens. Plants, such as the holly and laurel, which keep their leaves throughout the winter.

Everlasting flowers. Those which, from having little moisture to part with, keep the appearance of freshness for a long time.

Evernic acid, (e-ver'nik). $C_{17}H_{16}O_7$: an acid obtained from the lichen evernia.

Evolute, (ev'ō-lūt). [L. *evolvo*, I unroll.] A curve, from which an involute is formed by the gradual unrolling of a line from its surface. ABC is the evolute, DEFG the involute.



Evolute.

Evolution, (ev-ō-lū'shun). [L. *evolvo*, I unfold.] 1. The process of finding the square root, cubic root, &c., of any given number. 2.=Growth (increase of bulk) and development (increase of structure). *E. theory:* that new species of animals and plants have been developed by a natural process, of which the factors are Heredity, Variation, and Adaptation.

Ewe, (ū). [*Eown*, the A.-S. name.] A female sheep. *v.* Ovis.

Ex, (eks). [L. *ex*, from, or out of.] A prefix used to convey the idea of motion from or out of.

Exalbuminous, (eks-al-bū'min-us). [Ex and Albumin, *q.v.*] Used in botany to describe seeds that have but little, if any, albumin.

Exanthalose, (eks-an'thal-ōs). [Gk. *exantheo*, I effloresce, *hals*, salt.] An efflorescence of glauber-salt.

Exanthema, (eks-an-thē'ma). [Gk. *exanthema*, a blossoming.] An efflorescence of the skin.

Excentric=Eccentric, *q.v.*

Exchange, (eks-chānj'). [*Echanger*, the French word.] Of heat: of any two bodies at different temperatures near each other, each gives and receives heat until both are at the same temperature.

Excortication, (eks-kor-ti-kā'shun). [Ex and Cortex.] The removal or falling off of the bark from a tree.

Excrement, (eks'kre-ment). [*Excrementum*, the Latin word.] Partly undigested food, partly intestinal secretions; usually of stable chemical composition, and usually acid.

Excretin, (eks-krē'tin). [Excrement, *q.v.*] Probably $C_{20}H_{36}O$: a crystalline substance obtained from excrement.

Excretory organs, (eks-krē'to-ri). [L. *ex*, out; *cresco*, I grow.] Skin, lungs, and kidneys, *q.v.*

Exitelite, (eks'it-e-lit). [Fr. *Exitele*.]=Valentinite, *q.v.*

Exocœtus, (eks-ō-sē'tus). [The Latin name.] =Flying fish: has pectoral fins that can be used as wings to rise 2 or 3 feet from the water.

Exoccipital, (eks-ok-sip'i-tal). [Ex and Occiput.] Belonging or related to the first cranial segment.

Exogens, eks'ō-jens). [Gk. *exo*, without; *gennao*, I produce.] A division of flowering plants in which the stem or trunk has a hollow woody axis containing pith; the leaves are usually broad and rounded, with net-like veins; the roots have an exorhizal germination, and a solid woody axis. The plants live for an indefinite time, and never grow from a single terminal bud. They are divided into diclinous exogens and hermaphrodite exogens, and are not found fossil in any primary rocks, and very rarely in any bed older than Upper Cretaceous.


Exogen.

Exogyra, (eks-ō-jī'ra). [Gk. *exo*, without; *gyros*, curved.]=1. Fossil sponges. 2. An oyster-like fossil. Named from the spiral curve.

Exorhizæ, (eks-ō-rī'zē). [Gk. *exo*, without; *rhiza*, root.] Plants of which the roots grow from the extremity of the seed, and do not burst through the coat of the seed from within. *cf* Endorhizal.

Exorhizal, (eks-ō-rī'zal). [Exorhizæ, *q.v.*] Belonging or related to Exorhizæ, *q.v.*

Exoskeleton, (eks-ō-skel'e-ton). [Gk. *exo*, without; *skeletos*, skeleton.] The hardened portions of the integument. *cf.* Endoskeleton. *v.* Skeleton.

Exosmose, (eks'os-mōs). [Gk. *exo*, without; *osmos*, thrusting.] *v* Endosmose.

Exosperm, (eks'o-sperm). [Gk. *exo*, without; *sperma*, seed.] The outer coating of a spore.

Exoteric, (eks-ō-ter'ik). [Gk. *exoterikos*, on the outside.] External, popular, opposed to Esoteric, *q.v.*

Exothecium, (eks-ō-thē'si-um). [Gk. *exo*, without; *theke*, sheath.] The outer covering of a seed-case.

Exotic, (ekz-ot'ik). [Gk. *exotikos*, foreign.] Introduced from abroad. *cf* Indigenous.

Expansion, (eks-pan'si-on). [L. *expando*, I stretch out.] Increase of space occupied by a given quantity of matter. *E. of water:* takes places in rising above or falling below 4° C. *E. of gases* (including air): about $\frac{1}{273}$ of their volume, at 0° C., for each degree C., and $\frac{1}{490}$ for each degree F. *E. cam:* a cam used to open and shut the valve, admitting the steam in expansive working. *Co-efficient of E.:* the amount of increase in the volume of a given substance in rising from 0° to 1° C.

Expansive working, (eks-pan'siv). [Expansion, *q.v.*] In steam engine: in which the supply of steam is cut off before the cylinder is full, the movement of the piston being completed by the expansion of the steam; the object being to economise the steam. *E. gear:* the machinery requisite for expansive working.

Explosion, (eks-plō'si-on). [L. *explodo*, I drive out.] A sudden and large increase of volume, usually by the conversion of a solid or liquid into a gas. *Steam E.:* the fracture of a boiler by the excessive pressure of steam.

Explosive agents, (eks-plō'siv). Substances by means of which explosions can be pro-

duced. – Chloride of Nitrogen, Dynamite, Gun-cotton, Gunpowder, Iodide of Nitrogen, Mercuric fulminate, Nitro-glycerine=Glonoine, Perchloric ether, Silver fulminate.

Exponent, (eks-pō'nent). [L. *expono*, I set out.] Index used in arithmetic and algebra to denote the power to which a quantity is to be raised: *e.g.*, $4^2=4\times4$. m^n=the product of m multiplied $n-1$ times by $m=m\times m\times m$ (n times).* Here 2 and n are exponents.

Exsiccator, (eks-ik'a-tor). [L. *exsicco*, I dry.] A drying apparatus, formed by the use of substances, such as chloride of calcium, which readily absorb moisture.

Exstipulate, (eks-stip'ū-lāt). *v.* Stipule

Extra-current. An induced galvanic current: in the same direction as the principal current when contact is made; in the reverse direction when it is broken.

Extrados, (eks-trā'dos). [The French word.] The outer curve of an arch or of a vault.

Extraordinary ray. One of the two rays resulting from double refraction, *q v.*

Exuviæ, (eks-ū'vi-ē). [The Latin word] Any things that are cast off as useless, as skins and shells of some animals.

Eyas, (ī'as) [Fr. *niais*, from the nest.] A hawk too young to leave its nest.

Eye, (ī). [*Eage*, A.-S. word.] 1. The organ of sight, by means of which light affects the optic nerve. 2. In potatoes, a bud, a point of growth.

Eyeball. A tough spheroid of connective tissue, the front of which is transparent.

Eyebolt. A bolt or bar having an eye at one end.

Eyebright, (ī'brīt). [Eye and Bright.]=Euphrasia, *q.v.*: named from having been used medicinally for the eyes.

Eyeglass=Spectacles.

Eyelashes. Hairs fringing the eye.

Eye lens. The lens of a compound eyepiece, which in use is nearest to the eye.

Eyelids. Folds of skin which can be drawn over the eye.

Eyemuscles. Those by which the eyeball is moved.

Eyepiece. The simple or compound lens, in any optical apparatus, to which the eye is applied.

Eyetooth=Canine-tooth: a conical tooth next to the incisors.

Eyot, (ī'ot) [A.-S. *ey*, island.]=Ait: a small river island.

Eyrie, (ā'ri or ī'ri). The nest of a bird of prey, especially of an eagle.

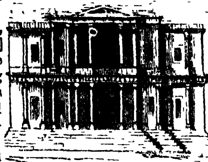
F.

Fabaceæ, (fa-bā'se-ē). [L. *faba*, bean.]= Leguminous plants: herbs, shrubs, and large trees, with papilionaceous corolla and leguminous fruit, belonging to Rosales.

Fabago, (fa-bā'go). [L. *faba*, a bean.] A plant belonging to Fabaceæ.

Faboidea, (fa-boi'de-a). [L *faba*, bean; Gk. *eidos*, form.] Fossil remains of leguminous plants.

Facade, (fa-sād') [The French word.] The front of a building, especially the principal front.


Facade.

Face, (fās). [*Facies*, the Latin word.] The front of the head, including the special organs of sight and smell the mouth, forehead, &c. *F wheel*: a wheel having cogs or pins on its face.

Facial nerves, (fā'shi-al). [Face, *q v.*] The seventh pair of cerebral nerves, belonging to the face muscles.

Factors, (fak'torz). [L. *factor*, maker.] The numbers which, when multiplied together, produce a given number are the factors of that number. Ex.: 4 and 8 are factors of 32; 3 and 7 are the factors of 21, &c.

Faculæ, (fak'ū-lē). [L *facula*, small torch.] Brilliant ridges and plains upon the photosphere of the sun; probably mountains or heaped-up matter. *cf.* Maculæ.

Fæces, (fē'sēz). [L. *fæx*, dregs.]=Excrement *q.v.*

Fœniculum, (fē-nik'u-lum). [The Latin name.] =Fennel, *q.v.*

Fagine, (fā'jin). [Fagus, *q.v.*] A narcotic obtained from beech nuts.

Fagopyrum, (fā-go-pī'rum). [Gk. *phago*, I eat; *pyros*, wheat.] A plant belonging to Polygonaceæ; also called Polygonum Fagopyrum. *F. esculentum*=Buckwheat, *q.v.*

Fagus, (fā'gus). [Gk. *phago*, to eat.]=Beech, *q v.*: a large tree belonging to Corylaceæ.

Fahlerz, (fā'lerz). [The German name.]= Grey copper ore; also called Fahlore. *Silver F.*: a copper ore containing silver.

Fahlunite, (fah'lu-nīt). [Fahlun, in Sweden.] A mineral, chiefly silicate of magnesia and alumina. *Hard F.*=Iolite.

Fahrenheit's scale, (fa'ren-hīt). [Fahrenheit, the inventor.] Of thermometer: in which the freezing point of water is 32°, and the boiling point 212°, the distance between being divided into 180 equal parts: in common use in England. *cf.* Centigrade and Reaumur scales.

Fairing, (fā'ring). A corrective process in shipbuilding, by which errors in the plans are detected before the building is commenced.

Fairy, (fā'ri). [F *féerie*, fairy-like.] Used as a common name for some animals of especially graceful form. *F. martin*=Hirundo ariel: Australian. *F. shrimp*=Chirocephalus diaphanus.

Falcate, (fal'kāt) [L. *falx*, sickle.] Sickle-shaped.

Falco, (fal'ko). [The Latin name.]=Falcon, a bird of prey, belonging to Raptores, includes the fishing eagle, bald buzzard, &c.

Falcon, (faw'kn). [*Faucon*, the French name.] =Falco rufipes: a bird used in sport.


Falcon

Falconidæ, (fal-kon'i-dē). [Falcon, *q.v.*] = Raptores: birds of prey: eagles, vultures, kites, buzzards, &c.

Fall of bodies. Caused by the attraction of the earth. *v.* Laws of motion.

Fall poison=Amianthium muscætoxicum.

Falling stars=Aërolites, *q.v.*

Fallopian tubes, (fal-lō'pi-an). [M. Fallopius]=Oviducts: connect the uterus and ovaries, and convey the ova to the former; in man, fine tubes 4 inches long.

False bedding=Cross-bedding: in which the minor layers are not parallel to the larger. *F. keel.* *v.* Keel. *F. scorpions*=Eophrynus. *v.* Scorpion.

Falsetto voice, (fawl-set'tō). [The Italian word.] Artificial high notes of the voice, produced by tightening the glottis.

Faluns, (fa'loon). [The French word.] Beds of sand and marl, containing shells and corals, found in France, and used for manure; belong to Upper Miocene strata.

Falx. A membrane between the two upper halves of the brain.

Families of men. *v.* Man.

Family, (fam'i-li). [*Familia*, the Latin word.] 1. A sub-division of an order of animals or plants, often used generally for a group of genera having a general resemblance, also used as=order. 2. In chemistry: a family is a group of compounds having a common element or nucleus. Ex.: the alcohol family includes all bodies containing the radicle ethyl.

Fan. *F. palm*=Borassus flabelliformis. *F. tail:* a variety of pigeon named from the form of its tail.

Fangs, (fangz). [A.-S. *fang*, grasp.] Used for pointed teeth generally. 1. The lower parts of teeth, which are set in the jaw. 2. Poison-fangs of serpents: teeth having a groove along which the venom passes.

Fantees, (fan'tēz). An African people.

Farad, (far'ad). [M. Faraday.]=10^7 natural units: the measure of electro-magnet capacity. *v.* Electro-magnet units.

Faraday, (far'a-dā). *F.'s wheel:* a disc of which a portion is cut out, and which, when made to revolve rapidly, disappears, owing to the image of what is seen remaining on the retina. *F.'s voltameter:* measures the intensity of a galvanic current by the quantity of water decomposed by it in a given time. *F. and Melde's figures:* regular figures formed by sand or water spread over a vibrating surface.

Fascines, (fas-sēnz'). [The French word.] Bundles of twigs or branches used for filling up ditches, and for temporary defences, in warfare; also in engineering works for similar purposes.

Fascicularia, (fas-si-kū-lā'ri-a). [L. *fasciculus*, little bundle.] Bryozoan animals, remains of which are found in the Coralline Crag.

Farewell-rock=Millstone grit, because no coal is found beneath it.

Fashion-timbers: in the framework of the stern of a ship.

Fast and loose pulley: Several pulleys on one axis; those that are fixed and revolve with it are the fast pulleys; those that are free and can revolve without it are loose. By these, machinery can be stopped and set going while the prime mover continues in motion.

Fats, (fatz). [The A.-S. word.] Compounds of carbon hydrogen and oxygen, solid or liquid combustible substances, mostly compounds of olein, margarin, stearin, &c., which stain paper=Ethers of glycerin: compounds of carbon, hydrogen, and oxygen, a primary division of foods. *Solid F. of vegetable origin:* cocoa-nut oil, nutmeg butter, palm-oil. *Solid F. of animal origin:* butter, lard, suet, spermaceti, bees'-wax.

Fata Morgana, (fā'ta mor-gā'na). [Breton, *mor*, sea; *gan*, fine woman.]=Sea woman: a reversed image of an object seen in the air; occurs most frequently at sea.

Father lasher=Cottus bubalis: a fish belonging to Acanthopterygii.


Father-lasher.

Fatty acids, (fat'ti). [Fat, *q.v.*] Acids obtained by the saponification of fats=1. $C_nH_{2n-2}O_2$: the acetic or stearic series. 2. $C_nH_{2n}O_3$: the glycolic series. 3. $C_nH_{2n}O_2$: the oleic series. 4. $C_nH_{2n-2}O_4$: the oxalic series.

Fauces, (faw'sēz). [The Latin word.] *Isthmus of F.:* the space between the arches of the palate.

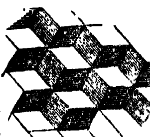
Faujasite, (faw'ja-sīt). [M. Faujus de St. Fond.] A mineral, chiefly hydrous silicate of aluminum.

Fault, (fawlt). [*Faulte*, the French word.] Displacement of the strata on one side of a fissure.

Fauna, (faw'na). [L. *Fauns*, forest gods.] A general term for all the animals of a country. *cf.* Flora.

Faure's battery, a modification of Bunsen's, *q.v.*

Fauserite, (faw'ser-īt). [Mr. Fauser.] Hydrated sulphate of magnesium.


Favosa.

Favosites, (fa-vō'si-tēz). [L. *favus*, honeycomb.] Tabulate corals, polyps, approximating to sponges, of which reefs were built in the Palæozoic period.

Faun, (fawn). [*Faon*, the French name.] A young deer.


Faun.

Faxoe beds, (fak'sō). Partly connect Secondary and Tertiary rocks.

Fayalite, (fā'a-līt). [Fayal, an island; Gk. *lithos*, stone.] A mineral, chiefly silicate of iron.

Faye's comet=Comet VI. of 1873; a telescopic comet, with a period of 7½ years, discovered in 1843 by M. Faye, a French astronomer.

Feathers, (feтн'ẹrs). [*Fedher*, the A.-S. word.] Peculiar horny sub-divided developments of the epidermis, found only on birds. Have been called "plants growing on animals," also "skin plants." *Clothing F.*: covering the body. *Primary F.*: rise from the bone of the hand. *Quill F.*: in the wings and tail. *Secondary F.*: rise from distal end of fore-arm. *Tertiary F.*: rise from proximal end of fore-arm. *F. alum*; fibrous varieties of alum; *v.* Halotrichite. *F. bearers*=Plume moths=Pterophori. *F. edged*; having one edge thinner than the other. *F. grass*=Stipa, a plant belonging to Graminaceæ. *F. ore*: a fibrous variety of lead ore: also called Heteromorphite: *v.* Jamesonite. *F. stars*=Comatulæ: animals belong to Crinoidæ.

Featherings=Foliations, *q.v.*

Fecula, (fek'u-la). [L. *fæcula*, dregs.] Any powdered substance obtained from plants; used especially for such as starch.

Fecundation, (fek-un-dā'shun.) [L. *fecundo*, I fertilise.] The union of the sperm and germ elements, which fertilises the germ.

Feejeans, an Oceanic race; natives of Feeje Islands.

Feeling, (fē'ling). [A.-S. *felan*, I feel.] The sense of touch, diffused generally over the whole body.

Feldspar, (feld'spar). [Ger. *feld*, field; *spath*, spar.] A mineral, chiefly silicate of aluminum, of which there are many varieties. The word is also used generally as=Orthoclase, also for the feldspar group of minerals which includes Albite, Andesite, Anorthite, Hyalophane, Labradorite, Oligoclase, Orthoclase; *v.* Felspar. *Blue F.*=Lazulite. *Labrador F.*=Labradorite. *Lime F.*=Anorthite. *Potash F.*=Orthoclase. *Soda F.*=Albite.

Feldspath, (feld'spath). [The German word.] =Feldspar, *q.v.*

Feldstein, (feld'stīn). [Ger. *feld*, field; *stein*, stone.]=Feldspar, *q.v.*

Felidæ, (fē'li-dē). [Felis, *q.v.*] Cat-like animals: lions, tigers, hyænas, &c.; a group of carnivorous animals, marked by strength and fierceness; have usually strong curved teeth and claws.

Felis, (fē'lis). [The Latin name.]=Lion, cat, tiger, &c.: a genus of animals belonging to Felidæ; found everywhere but in Australia. *F. leo*=Lion. *Fossil F.*: F. catus, F. leo, F. pardoides, F. spelæa, F. tigris.

Felsite, (fel'sīt). [Ger. *fel*, rock.] A mineral, chiefly silicate of alumina; a compact variety of felspar.

Felsobanyite, (fel-se-ban'yīt). [Felsoöbanya, in Hungary.] A mineral, chiefly hydrous sulphate of aluminum.

Felspar, (fel'spar). [*Fel*, rock; *spath*, spar.] Double silicates of aluminum and potassium or sodium, &c.; a constituent of granite, basalt, porphyry, &c.; minerals mostly plagioclastic and triclinic.

Felspar group of minerals, includes Orthoclase, Albite, Oligoclase, Labradorite, and other felspars. *Potassium F.*=Adularia=Orthoclase =Common F. *v.* Feldspar.

Felstone, (fẹl'ston). Felsite: compact felspar.

Felt, (felt). [The A.-S. word.] Cloth made of wool, hair, &c., by pressure, which forms it into a matted substance.

Felt-moulds=Antennariei: fungi belonging to Physomycetes.

Female, (fē'māl). [*Femina*, the Latin word.] *v.* Sex.

Femoral, (fem'o-ral). [Femur, *q.v.*] Connected with, or relating to, the femur.

Femur, (fe'mur). [The Latin word.] The thigh bone; the longest and strongest bone in the human skeleton.

Fenestella, (fen-es-tel'la). [L. *fenestella*, little window.] A polyzoon: known by many fossil remains in Devonian limestone and other rocks.

Fenestra, (fen-es'tra). [L. *fenestra*, window.] Two openings in the ear, closed by membranes; one called the fenestra rotunda, the other the fenestra ovalis.

Fennel, (fen'nel). [*Fenol*, the A.-S. name.] =Fœniculum: a plant belonging to Apiaceæ. *Oil of F.*=Oil of anise, *q.v.*

Fenugreek, (fē-nū-grēk'). [L. *fœnum*, hay; *Græcum*, Greek.]=Trigonella: a plant belonging to Leguminaceæ.

Feræ, (fe'rē). [L. *ferus*, wild.] A sub-division of Mammalia, according to Linnæus's classification of animals. Used by Giebel for carnivorous and insectivorous mammalia. Also *v.* Bonaparte's classification.

Ferberite, (fẹr'bẹr-īt). A mineral, chiefly tungstate of iron.

Ferguson's paradox. A train of wheelwork, in which two wheels are turned in different directions at the same time by the motion of a third wheel.

Fergusonite, (fẹr-gus'o-nīt). [Mr. Ferguson.] A mineral, chiefly niobate of yttrium and cerium.

Ferment, (fẹr'ment). [L. *fermentum*, leaven.] =Catalytic body: a substance which causes fermentation; *e.g.*, yeast, must, &c. According to the physical theory of fermentation, ferments are dead nitrogenous substances.

Fermentation, (fẹr-men-tā'shun). [Ferment, *q.v.*] Catalysis; a transformation of an organic body, whose constituents have but feeble affinity, into simpler substances, which commences from the action of a small addition of organic matter in such a state of change, accompanied by the production of alcohol, acetic acid, and lactic acid, &c.; also

regarded as the decomposition of sugar by the action of yeast-cells. *Varieties of fermentation* are:—Acetous F., Alcoholic F., Butyric F., Lactous F.=Lactic F., Mucous F., Saccharous F., Vinous F., &c., named from the more important products. *Physical theory of F.*=Liebig's theory; that fermentation is purely chemical. *Vital theory of F.* =Pasteur's theory: that life is essential to fermentation.

Fern, (fern). [*Fearn,* the A.-S. name.] An herb, sometimes a shrub or tree, with fibrous root or rootstock; with frond-like leaves: reproduced by means of minute spores. *v.* Ferns. *F. royal*=Osmunda. *Bladder F.*= Cystopteris. *Bristle F.*=Trichomanes. *Filmy F.*=Hymenophyllum. *Flowering F* = Osmunda. *Hard F.*=Lomaria. *Maidenhair F.*=Adiantum. *Male F.*=Nephrodium filix-mas. *Parsley F* = Cryptogramme. *Shield F.*=Aspidium. *Tree F.* =Cyathea.


Fern.

Ferns, (fernz). [Fern, *q.v.*]= Filices = Polypodiaceæ; a primary division of Vascular Cryptogams.

Ferrates, (fer'rats). [Ferric, *q.v.*] Salts of ferric acid.

Ferrein. *Pyramids of F.*: in the kidneys, formed by the tubes entering Malphigian vessels.

Ferret, (fer'ret). [*Furet,* the French name.]= Mustela furo: a small weasel-like quadruped, belonging to Mustelidæ.


Ferret.

Ferric, (fer'rik). [Ferrum, *q.v.*] Containing iron as an important constituent. *Anhydrous F. acid*=FO_3. *F. acid*=H_2FO_4: an unstable acid, known only in combination. *F. oxide*=Fe_2O_3=Peroxide of iron = Red oxide of iron; also called Colcothar, Rouge, and by other names. *F. salts*=Persalts of iron.

Ferricum, (fer'ri-kum). [Ferrum, *q.v.*]=⅓ Fe: an hypothetical combining equivalent of iron.

Ferricyanide, (fer-ri-si'a-nid). [Ferrum and Cyanogen.] A compound of a metal and ferri-cyanogen. *Potassic F.*=Red prussiate of potash=$K_6Fe_2Cy_{12}$.

Ferricyanides, (fer-ri-si'a-nīdz). [Ferrum and Cyanide, *q.v.*]=Ferridcyanides. Compounds of metals and the radicle ferri-cyanogen.

Ferricyanogen, (fer-ri-sī-an'o-jen). [Ferrum and Cyanogen, *q.v.*]=Fe_2Cy_{12}=Cfdy: an hypothetical radicle of ferri-cyanides.

Ferro, (fer'ro). [Ferrum, *q.v.*] A prefix denoting the presence of iron. *F. calcite:* a variety of calcite. *F. cobaltite:* a variety of cobaltite. *F. tantalite*=Tantalite. *F. titanite* =Schorlomite.

Ferrocyanide, (fer-rō-sī'a-nid). [Ferrum and Cyanogen, *q.v.*] *Potassic F.*=Yellow prussiate of potash=K_4FeCy_6.

Ferrocyanides, (fer-rō-sī'a-nīdz). Compounds containing a metal and the radicle ferrocyanogen.

Ferrocyanogen, (fer-rō-sī an'o-jen) [Ferrum and Cyanogen, *q.v.*]=FeC_6N_6=$FeCy_6$=Cfy, an hypothetical radicle of ferro-cyanides.

Ferrous, (fer'rus). [Ferrum, *q.v.*] A prefix denoting the presence of iron. *F. sulphate* = $FeSO_4{\cdot}7H_2O$ = Protosulphate of iron = Green vitriol = Copperas. A dark green cystalline substance, much used as an ingredient in black dyes. *F. oxalate*=Humboldtite=Iron-resin: $2FeC_2O_4{\cdot}3H_2O$.

Ferrum, (fer'rum). [The Latin word.]=Fe″ =Iron, *q.v.*; an elementary metallic substance.

Fertile nurse forms, in plants and animals: organisms which become fertile without ever becoming perfect. *v.* Nurse forms. *E.g.*, Aphides, echinus, prothallium, &c.

Fertilization=Making fruitful. *F. of flowers:* of those with bright, odorous, honeyed flowers, usually by insects, of those with inconspicuous flowers, usually by wind.

Ferula, (fer'u-la). [L. *fero,* I strike.] A plant belonging to Apiaceæ. *F. asafœtida*=Asafœtida.

Ferulic acid, (fer'u-lik). [Ferula, *q.v.*] $C_{10}H_{10}O_4$, a monobasic acid substance found in ferula.

Festuca, (fes-tū'ka). [Celt. *fest,* pasture or food.] = Fescue grass; a plant belonging to Gramınaceæ.

Fettbol, (fet'bol). [Ger. *fett,* fat; *bol,* bole.]= Chlorophal: a mineral, chiefly hydrous silicate of iron.

Fettstein, (fet'stīn). [Ger. *fett,* fat; *stein,* stone.]=Nephelite: a mineral, also called Oilstone, *q.v.*

Feuerblende, [Ger. *feuer,* fire; and Blende, *q.v.*]=Pyrostilpnite, *q.v.*

Feverfew, (fē'ver-fū). [L. *febris,* fever; *fugo,* I drive away.]=Pyrethrum parthenium= Matricaria parthenium: a plant belonging to Asteraceæ.

Fiber, (fi'ber). [The Latin name.]=Castor fiber=Beaver, *q.v.*

Fibre, (fi'ber). [L. *fibra,* thread.] Used generally for any thread-like substance.

Fibres of Corti. Minute rods or fibres in the *scala media* of the ear, which, being set in vibration by sound, act on the auditory nerve by means of the scala media, and distinguish the quality of the sound; each fibre vibrating to a certain note only.

Fibrin, (fi'brin). One of the constituents of blood, which unites with the corpuscles when the blood coagulates; it is also the principal component of muscular tissue; resembles albumin in composition: probably=oxidised albumin. *v.* Proteids and Albuminoid principles.

Fibrinogen, (fī-brin'o-gen). [Fibrin, *q.v.*: and Gk. *gennao,* I produce.]=Incipient albumin: a modification of globulin, found in the plasma of the blood, causing the production of fibrin.

Fibro-vascular tissue = Phloem and Xylem, *q.v.* A compound found in plants.

Fibroferrite, (fī-brō-fer'īt). [Fibre and Ferrum, *q.v.*] A mineral, chiefly hydrous sulphate of iron.

Fibroin, (fī'broin) [Fibre, *q.v.*] $C_{15}H_{23}N_5O_6$. the chief material of silk, *q v.*

Fibrolite, (fī'brō-līt). [Fibre; and Gk. *lithos*, stone.] Chiefly silicate of aluminum: much used for implements in the "Stone age."

Fibrous tissue, (fī'brus). [Fibre, *q v.*]=Connective tissue, *q.v.*

Fibula, (fib'ū-la). [L. *fibula*, buckle]=Splint-bone: the small bone of the leg, corresponding to the Ulna.

Ficaria, (fi-kā'ri-a). [L. *ficus*, fig.]=Pile-wort =Ranunculus F.: an herb, belonging to Ranunculaceæ.

Fichtelite, (fik'te-līt). [M. Fichte] A hydrocarbon, found in fossils, and in Pinus Australis. *F. group of minerals*=C_nH_{2n-4}: belongs to Camphene series of hydrocarbons: includes Fichtelite, Hartite, Dinite, Ixolyte.

Ficoidales, (fī-koi-dā'lez). [Ficus, *q.v*; Gk *eidos*, form.]=Mesembryaceæ: herbs and shrubs, with fleshy leaves, forming a division of Perigynous Exogens.

Ficoids, (fī'koidz). [Ficus, *q.v.*, Gk *eidos*, form.]=Ficoidales, *q.v.*

Ficus, (fī'kus). [The Latin name]=Fig-tree: a wide-spreading tree, with short thick trunk, belonging to Urticaceæ. *F. benjamina* = Benjamin tree. *F. carica* = Common fig. *F. elastica*=Caoutchouc tree of India. *F. Indica* = Banyan tree. *F. religiosa*=Bo tree.

Field, (fēld). *F. bug*=Pentatoma. *F. fare*= Turdus pilaris. *F glass:* between the object and eye glasses. *F. lens*=the lens of a compound eye-glass which is towards the field-glass.

Fieldite, (fēl'dīt). [Mr. Field] A variety of tetrahedrite.

Fifth, (fifth). In music: the interval between a note and another four notes higher. *F. nerve:* the sensitive nerve of head and face; moves the masticating muscles, and supplies sense of taste to the tongue.

Fig, (fig). [*Fec*, the A.-S. name.]=Ficus, *q.v.*, a tree of which the fruit forms a kind of bag.


Fig.

Fig-eater = Beccafico = Sylvia: a bird belonging to Insessores.

Fighting crab = Gelasimus bellator: a crab having one claw very large.

Figures, (fig'ūrz). Chladni's F., Faraday and Melde's F., and Lichtenberg's F., *q.v.*

Figure stone=Agalmatolite, *q.v.*

Fig-wort, (fig'wurt). [Fig and wort, *q.v.*]= Scrophularia, *q.v.*

Filbert, (fil'bert). [Fill-beard or Philbert.]= Corylus avellana: the cultivated hazel.

File fishes=Balistes, *q.v.*: named from the file-like appearance of their skins.

Filicales=**Ferns**: vascular plants with spore-bearing leaves, forming a division of Acrogens, *q.v.*

Filices, (fil'i-sēz) [L. *filix*, fern.]=Ferns: As arranged by Lindley—
Gleicheniaceæ.
Polypodiaceæ.
Osmundaceæ.
Danæaceæ
Ophioglossaceæ.

As arranged by Hooker—
Hymenophylleæ=Filmy ferns.
Polypodieæ=Maiden hair fern.
Osmundeæ=Fern-royal
Ophioglosseæ=Adder's tongue.

Filicic acid, (fil'i-sik). [Filices, *q.v.*] $C_{14}H_{18}O_5$: an acid substance found in the root of Aspidium filix-mas.

Filicinæ, (fil-is'i-nē). [L. *filix*, fern.]=Filices. *v.* Perleb's classification.

Filicoid, (fil'i-koid). [Filices, *q.v.;* Gk. *eidos*, form.] Fern-like.

Fillet, (fil'let). [F. *filet*, thread.] A narrow moulding.

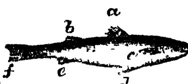
Fillings. Timber in the lower part of a ship, to strengthen it and prevent hogging, *q.v.*

Filter, (fil'ter). [*Filtre*, the French word.] An apparatus for separating water, or any other liquid, from any solid impurities in it, by means of a porous substance through which it percolates

Filtration, (fil-trā'shun). [Filter, *q.v.*] The process of filtering a liquid. *v.* Filter.

Fimbriæ, (fim'bri-ē). [The Latin word.] Fringe like processes: on animals, plants, &c.

Fin, (fin). [The A.-S. word.] An expansion of the integument in fishes, serving for propulsion and support *Pectoral F.:* analogue of anterior limbs. *Ventral F.:* analogue of posterior limbs



Fins.
e, anal, *f*, caudal; *a*, dorsal, *c*, pectoral; *d*, ventral.

Fin-whale. A whale having a dorsal fin. = Balænoptera and Physalus.

Finch, (finsh). [*Finc*, the A.-S. name.]= Fringilla; also a general name for the family Fringillidæ.

Finder. A small telescope attached to an astronomical telescope; used to find more readily any required star, &c.

Fingers, (fing'gerz). [The A.-S. word.]— Digits: the terminations of the hand. *First F* =Index F.

Finial, (fin'i-al). [L. *finis*, end.] The termination of a spire, pinnacle, &c.: often in the form of flowers, leaves, fruit, &c.


Finial.

Finners, (fin'nerz). [Fin, *q.v.*] *v.* Fin-whales.

Finner, (fin'ner). [Fin, *q.v.*]= Finner-whale = Balænoptera, *q.v.*; the largest animal known, 90 feet long.

Fiorite, (fī'o-rīt). A variety of opal, *q.v.*

Fir, (fer). [A.-S. *furh.*]=Pinus: a tree belonging to Coniferæ, *q.v.*; also called Abies. *Norway F.*=Abies-excelsa. *Silver F.*=Abies Picea. *F. rapes*=Monotropaceæ.


Fir-tree.

Fire, (fīr). [Fyr, the A.-S. word.] *F. damp*= Carburetted hydrogen and air, which takes fire with explosive violence. *F. bird*=Baltimore oriole. *F. blende* =Pyrostilpnite. *F. clay*: a variety of clay free from alkaline earth, which therefore resists the action of heat. *v.* Dinas and Stourbridge *F. flies*: glow-worm, &c. *v.* Lampyridæ. *F. tails*=Chrysididæ: insects parasitic in nests of other insects. *F. tree*= Nuytsia floribunda, named from its bright orange blossoms.

Firkin, (fer'kin). [A.-S. *feover*, fourth part.] A small cask containing nine gallons; named from being the fourth part of a barrel.

Firolidæ, (fi-rol'i-dē). Gasteropods with very large bodies, and either very small shells or none.

Fischerite, (fis'ser-it). A mineral, chiefly phosphate of aluminum.

Fish, (fish). [*Fisc*, the A.-S. name.] A vertebrate, oviparous, cold-blooded animal, adapted to aquatic life; breathing by means of gills, and moving by means of fins. *Electric F.*, *v.* Electric. *F. age*=Devonian. *F. lice*=Cymothoa: a small sessile-eyed crustacean, belonging to Isopoda.

Fisher-eagle=Haliætus maei=Falco maei: a bird of prey belonging to Falconidæ.

Fishes. Fossil remains of fishes very plentiful in Devonian rocks; not found in rocks older than Ludlow: no order of fishes is entirely fossil. Classified by Cuvier as—

Chondropterygii.
Acanthoptery.
Malacopterygii.

By Huxley—

Pharyngobranchii.
Marsipobranchii.
Teleostei.
Ganoidei.
Elasmobranchii.
Dipnoi.

By Muller—

Leptocardia.
Cyclostomata.
Teleostei.
Ganoidei.
Selachia.

Fish-eye-stone=Apophyllite, *q.v.*

Fishing frog=Lophius piscatorius.

Fissilinguia, (fis-si-ling'wi-a). [L. *fissus*, split; *lingua*, tongue.] A term used for lizards which have bifid tongues.

Fission, (fis'shun). [L. *fissura*, cleft.] Multiplication by division. *v.* Reproduction.

Fissiparity, (fis-si-par'i-ti). [L. *fissus*, split; *pario*, I bear.]=Fissiparous generation: a variety of gemmation, *q.v.*; *e.g.*, in Annellata, in which a number of consecutive individuals appear in a connected row, the last only being sexual.

Fissiparous, (fis-sip'a-rus). [L. *fissus*, split; *pario*, I bring forth.] Asexual generation, in which the body of one animal splits into two.

Fissipedia, (fis-si-ped'i-a). [L. *fissus*, split; *pes*, foot.]=Cats, dogs, bears, &c.; carnivorous terrestrial quadrupeds, having the toes free from each other, forming a sub-division of Carnivora, *q.v.*

Fissirostres, (fis-si-ros'trēs). [L. *fissus*, split; *rostrum*, beak.] Swallows: a sub-division of Insessores.

Fissura, (fis-sū'ra). [The Latin word.] *v.* Fissure. *F. Glasseri*=Glasserian fissure, *q.v.* *F. Rolandi*=Roland's fissure, *q.v.* *F. Sylvii* =Fissure of Sylvius.

Fissure, (fish'ūr). [*Fissura*, the Latin word.] A narrow cleft. *Glasserian F.*=in the ear. *Roland's F.*=in the brain. *F. of Sylvius:* a deep groove in the upper surface of the brain, separating the anterior and middle portions.

Fistularidæ, (fis-tu-lar'i-de) [L. *fistula*, pipe.] =Pipe mouths=Apodous Echinodermata: animals with worm-like bodies, connecting Echinodermata with Annelida, and thus connecting Radiata with Annulosa.

Fitzgerald's sounding machine. A modification of the Bull-dog machine, used for deep-sea sounding, *q v.* Used in the "Lightning" expedition in 1868.

Fitzinger's classification of animals:—

Vertebrata, having animal organs—

Mammalia.
Birds.
Reptiles.
Fishes.

Evertebrata, having vegetable organs—

Arthrozoa.
Dermatozoa=Mollusca.
Physozoa.
Gasterozoa, *q.v.*

Fitzroy barometer. A modification of the siphon barometer, *q v.*

Fixed. *F. air:* an old name for carbonic anhydride: CO_2. *F. liquids*, which cannot be vaporised by heat, owing to decomposition taking place. *F. oils:* those which are not volatilised by heat below 450° F.; *v.* oils. *F. stars:* those that always occupy the same places in the heavens, and whose relative positions do not change, excepting within very narrow limits; one of the nearest to us, 61 Cygni, is 59 billions of miles distant.

Flacourtia, (fla-kor'ti-ā). [M. Flacourt.] A plant, the type of Flacourtiaceæ.

Flacourtiaceæ, (fla-kor'ti-ā'se-ē). [Flacourtia, *q.v.*]=Bixads: shrubs and trees with leathery leaves and axillary flowers, belonging to Violales, found chiefly in E. and W. India and Africa.

Flag, (flag). [From *flag*, to hang down.] The popular name of several water-side plants. *Yellow F.*=Iris pseudacorus. *Sweet F.*= Acorus. *F. stone*=Laminated sandstone.

Flagellata, (fla-jel-lā'ta). [L. *flagellum*, a whip.] Infusoria which move by means of flagellæ or long filaments.
Flagellum, (fla-jel'lum). [L. *flagellum*, a whip.] Any whip-like body or appendage, as the trailing stem of a plant, &c.
Flakes, (flāks). [*Flace*, the A.-S. word.] Scales or small plates. *Flint F.*=Flat pieces of flint, broken off artificially. *Obsidian F.*=Knocked off by pressure.
Flamboyant, (flam-boy'ant). [The French word.] A style of architecture, named from the lines of tracery in the windows, which suggest the idea of flames. Dates from the 15th century.
Flame, (flām). [*Flamma*, the Latin word.] A luminous phenomenon which frequently occurs when chemical combination occurs at a high temperature. *v.* Combustion. *v.* Light. The brightness of a gas flame varies with the pressure of the gas. *F. moth*=Anticlea rubidata.
Flamingo, (fla-ming'gō). [Flame.] Phœnicopterus: a duck-like bird, with long and slender legs; named from its red colour.


Flamingo.

Flannel, (flan'nel). [*Flannelle*, the French word.] A woollen fabric, of comparatively thin and loose texture.
Flat-head. [Local name in Queensland.]=Ceratodus, *q.v.*
Flat-fishes = Pleuronectidæ: sole, plaice, turbot, &c.; fishes with the bodies compressed sideways, and having usually both eyes on one side of the head.
Flax, (flaks). [*Fleax*, the A.-S name.]=Linum: a plant, belonging to Linaceæ, the fibres of which are woven to form linen. *Common F.* = L. usitatissimum. *New Zealand F.*=Phormium. *Purging F.* L. catharticum.


Flax.

Flax-worts, (flaks'wurts). [Flax and Wort, *q.v.*]=Linaceæ, *q.v.*
Flea, (flē). [Flea, the A.-S. name.] =Pulex: a wingless insect, belonging to Diptera. *Garden F.*=Altica.
Flemingites, (flem'ing-ites). [Mr. Fleming.] Probably spores or sporangia of Lepidodendron.
Flemish bond. *v.* Bond.
Flesh, (flesh). [*Flasc*, the A.-S. word.] The complex substance of muscles, nerves, lymphatic, and blood-vessels, with intermediate connective tissue and water. *F. animals*=Head animals; Oken's term for Vertebrata. *F. fly*=Musca carnaria.
Fleshy polypes=Actinia, &c., *q.v.*
Flies, (flīz). [Plural of Fly, *q.v.*] Insects belonging to Diptera.
Flint, (flint). [The A.-S. word.] A variety of native silica, found chiefly in chalk rocks. *Liquor of F.*: a solution of flint in potassic hydrate. *F. rope* = Stem of Hyalonema Sieboldii: a sponge. *F. glass*: a silicate of potash and lead.
Flixweed, (fliks'wēd)=Sisymbrium Sophia: a plant belonging to Brassicaceæ.
Floating. *F. ribs*=Vertebral ribs. *F. battery* =A small Voltaic cell fixed on a cork, so as to float on water.
Float-stone. A cellular variety of native silica or quartz.
Floccular, (flok'u-lar). [L. *floccus*, a lock of wool.]=Flaky. *F. process*: in cerebellum of brain, fitting into a petrous bone.
Flocculus of cerebellum=Floccular process, *q.v.*
Flook, (flōōk). 1. = Flounder, *q.v.* 2. = Flucan, *q.v.*
Flora, (flō'ra). [L. *flos*, flower.] 1. A collective term including all the plants of a district. *cf.* Fauna. 2. Also used for a description of such plants. 3. No. 8 of minor planets, *q.v.*
Floral leaves=Perianth, *q.v.*
Flounder=Platessa flesus; also called Fluke and Flook.
Flour beetle=Tenebrio molitor.
Flower, (flow'ĕr). [*Flos*, the Latin word.] 1. That part of a flowering plant which produces the seed; consists of modified leaves; used also for the compound structure which contains the sexual organs of mosses; is produced by plants when the growth is beginning to cease. 2. Used sometimes for sublimates in a powdered form, as flour of brimstone, &c. *F. animals*=Anthozoa, *q.v.*
Flowers of tan. Receptacles of Æthalium, belonging to Gasteromycetes; named from growing on tan.
Flowering, (flow'ĕr-ing). [Flower, *q.v.*] Having flowers, especially having them in a distinct form. *F. fern*=Osmunda, *q.v.* *F. rush*=Butomus, *q.v.*
Flowering plants=Phanerogamia=
Gymnosperms, having no ovary.
Monocotyledons, Dicotyledons } having an ovary.
Flowerless plants, (flow'ĕr-les). [Flower, *q.v.*] Plants without distinguishable flowers =
Thallogens: stems and leaves not distinguishable;
Acrogens: stems and leaves separate.
Flucans, (flū'kans). [Probably from *Flook*, a Cornish word.] Fissures filled with clay: a Cornish term for cross-courses in sedimentary rocks
Fluellin, (flū-el'lin). *Male F.*=Lineria spuria: a plant belonging to Scrophulariaceæ.
Fluellite, (flū'el-līt). A mineral, chiefly a compound of fluorine and aluminum.
Fluid, (flū'id). [*Fluidus*, the Latin word.] 1.= Liquid: a condition intermediate between the solid and aeriform conditions; in which the particles lie closely together, yet are free to move individually. 2.=Liquid or gas: any body which is not solid, so that the particles can move individually. *Electric F.*, *v.* Electric. *Elastic F.*: a fluid, the volume of which is dependent upon the amount of pressure; applied especially to gases. *Magnetic F.*, *v.* Magnetic.

Fluidacia, (flū-i-dā'si-a). [Fluid, *q.v.*] *v.* Dumortier.

Fluke, (flūk)=Flounder, *q.v.* *F. worm*, *v.* Trematoda. *v.* Cercaria.

Fluo, (flū'ō). [Fluorine, *q.v.*] A prefix expressing the presence of fluorine.

Fluo-boric acid, (flū-ō-bō'rik). [Fluorine and Boron, *q.v.*] $B_2O_3.6HF$=Boro-fluoric: a solution of boro-fluoride in water; an oily corrosive liquid.

Fluocerine, (flū'o-ser-īn). [Fluo and Cerium, *q.v.*] A mineral, chiefly cerium and fluorine.

Fluocerite, (flū'o-ser-īt). [Fluo and Cerium, *q.v.*] A haliod mineral of the fluorite group, chiefly cerium and fluorine.

Fluochlore, [flū'o-klōr). [Fluo and Chlorine, *q.v.*]=Pyrochlore, *q.v.*

Fluor, (flū'or). [L. *fluo*, I flow.]=Fluor-spar. *F. apatite:* a variety of apatite. *F. spar*= Calcic fluoride=CaF_2: the only commonly found native compound of fluorine; also called Fluor, Fluorite, and Derbyshire spar.

Fluorene, (flū'ō-rēn). [Fluorine, *q.v.*] = $C_{13}H_{10}$: a hydrocarbon obtained from coal tar.

Fluorescein, (flū-ō-res'ēn).=$C_{20}H_{12}O_5$: a crystalline substance obtained from resorcin; named from becoming fluorescent when dissolved in ammonia.

Fluorescence, (flū-ō-res'ens). [Fluor, *q.v.*] The property of some usually invisible rays of a spectrum to become visible when their rates of vibration are altered. Ex. If a screen receiving a solar spectrum be soaked in solution of æsculine, the spectrum is lengthened, more rays becoming visible: caused by flour-spar, and other substances which reduce the vibrations of invisible rays, so as to make them visible.

Fluorhydric acid, (flū-or-hī'drik). [Fluorine and Hydrogen, *q.v.*]=HF=Hydrogen fluoride =Hydrofluoric acid, *q.v.*

Fluorides, (flū'ō-rīdz). [Fluorine, *q.v.*] Compounds of fluorine and a metal.

Fluorine, (flū'ō-rīn or flū'ō-rēn). [Fluo, to flow.]=F: a colourless gas, obtained separate with difficulty, one of the Halogens, *q.v.*

Fluorite, (flū'ō-rīt). [Fluor, *q.v.*]=Fluor: a mineral, chiefly fluoride. *F. group of minerals:* includes fluorite, fluocerite, cryolite, and yttrocerite.

Flustra, (flus'tra). = Sea-mat: a compound animal belonging to Polyzoa, consisting of minute animals living in aggregations; named from their mat-like appearance.

Flustridæ, (flus'tri-dē). [Flustra, *q.v.*]=Sea-mats: a family of Polyzoa, of which Flustra is the type.

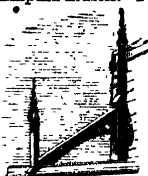
Fluvio marine, (Flū'vi-o ma-rēn'). [L. *fluvius*, river; *mare*, sea.] Related to both river and sea. *F. strata:* brought to the sea by the action of rivers.

Fluviales, (flū'vi-ā-lēz). [L. *fluvius*, river.] =Naiadaceæ, *q.v.*

Flux, (fluks). [L. *fluo*, flow.] A substance used in smelting to form fusible compounds with the earthy matters found in the ores. *Black F.* =Potassic carbonate and carbon. *White F.*=Potassic carbonate and nitre.

Fluxions, (fluk-shunz). [L. *fluo*, I flow.]= Differential calculus, *q.v.*

Fly, (flī). [*Fleoge*, the A.-S. name.]=Musca: an insect belonging to Diptera. *Blistering F.*=Cantharis. *Boat F.*=Notonecta. *Bot F.* = Œstrus equi. *Butter F.* = Papilio. *Caddis F.*=Phryganea. *Crane F.*=Tipula. *Day F.*=Ephemera. *Dragon F.*=Libellula. *Fire F.*=Lampyra. *Flesh F.*=Musca carnaria. *God F.*=Œstrus. *Gall F.*=Cynips. *Golden F.*=Chrysis. *Harvest F.*=Cicadia. *Horse F.*=Hippobosca. *Lantern F.*=Fulgora. *Saw F.* = Tenthredo. *F. catcher*= Muscicapa. *F. fungus*=Empusa muscæ. *F. wheel*, *v.* Wheel. *F. bug* = Reduvius personatus: an insect, belonging to Heteroptera, which devours the bed-bug.


Flying-buttress.

Flying. *F. birds*=Carinatæ. *F. bridge* = a boat moved to a buoy, so that the current moves it across a river. *F. buttress*, *v.* Buttress. *F. dragon*=Draco volans: a small Indian lizard. *F. fish*=Exocœtus. *F. fox*=Pteropus. *F. frog* = Rhacophorus; has large webbed feet with adhesive discs. *F. gurnard* = Dactylopterus. *F. lemur* = Galeopithecus. *F. lizard* = Pterosauria. *F. squirrel*, *v.* Squirrel.


Flying-fish.

Focal distance, (fō'kal). [Focus, *q.v.*] The distance of the focus from a mirror.

Foci, (fō'sī). Plural of Focus. *Calorific F.:* focus of heat rays. *Luminous F.:* focus of light rays. *Acoustic F.:* focus of sound rays.

Focus, (fō'kus). [The Latin word.] Point of concentration. *Real F.*: formed in front of a mirror by reflected converging rays of light. *Virtual F.*: apparently formed behind a mirror. *Conjugate F.*, *v.* Spherical mirror.

Fœniculum, (fē-nik'u-lum). [The Latin name.] =Fennel: an herb belonging to Umbelliferæ.

Fœtal, (fē'tal). [Fœtus, *q.v.*] Related to a fœtus. *F. cotyledons*, *v.* Cotyledon. *F. life:* the period of life during which the individual exists in the fœtal state.

Fœtus, (fē'tus). [The Latin name.] The young of vertebrate animals between the embryo and independent states; the perfected embryo during the period previous to its separation from the parent.

Fog, (fog). [*Fok*, the Icelandic word.] A visible vapour floating in the air, near the surface of the earth. *F. signals:* usually by means of sound, to give notice of danger in case of fog.

Foil, (foil). [L. *folium*, leaf.] 1. Very thin sheets of metal. 2. A rounded or leaf-like ornament in tracery.


Foils. (*Arch.*)

Tre-F.=having three leaves or cusps. *Quatre-F.*=having four leaves or cusps. *Cinque-F* =having five leaves or cusps.

Foliaceous, (fō-li-ā'shus). [*Foliaceus*, the Latin word.] Leaf-like.

Foliaceæ, (fō-li-ā'se-ē). [L. *foliaceus*, leaf-like.] = Hepaticæ and Musci, *q.v.* Plants with leaf-like expansions: a sub-division of Acotyledons. *v.* De Candolle's classification.

Foliation, (fō-li-ā'shun). [L. *folium*, leaf.]= Feathering: splitting into leaves.

Folkestone and Hythe Beds. Sand belonging to Upper Neocomian.

Follicle, (fol'li-kl). [L. *folliculus*, a little sack.] 1. A dry dehiscent fruit, consisting of a single carpel. *cf.* Legume. 2. A little bladder.

Folliculares, (fol-li-kū-lā'rēz) [L. *folliculus*, a little sack.] A sub-division of Proteaceæ, *q.v.*

Follower. Used in machinery, for the one of two pieces which is moved by the other.

Fomalhaut A star in Piscis Australis, of the first magnitude.

Fontanelles, (fon'ta-nelz) [F. *fontanelle*, little fountain] Membranous intervals between the bones of the skull, exist only in infancy: named from the pulsation of the brain being felt.

Food, (food). [*Foda*, the A.-S. word] Substances taken into the alimentary canal, from which nourishment of the body can be obtained; always contain protein, and are usually of unstable chemical composition. Divided into *Proteids:* such as albumen, gluten, casein, &c. *Fats:* such as oils, fat, &c. *Amyloids:* such as starch, sugar, gums, &c. *Minerals* · water, and various salts. In warm countries the food should contain an excess of oxygen, in cold countries an excess of carbon, above the average.

Fool's parsley=Æthusa, *q.v.*

Foot, (fŏt). [*Fot*, the A.-S. word] 1. The extremity of the posterior limb in man, quadrupeds, &c. 2. A measure of length, the unit of measurement in physics=12 in. *F. jaw* = Maxillipedes, *q.v.* *F. pound*, a measure of energy=one pound raised through one foot against gravitation. *F. prints, fossil:* footmarks of quadrupeds and birds, found as far back as the Silurian rocks. *v.* Lithicnozoa.

Foraging ants=Ecitons, *q.v.*

Foramen, (for-ā'men). [The Latin word] A hole, or small opening. *F of Monro*, in the cerebrum of the brain. *F. of Pannizzæ*, between the aorta and pulmonary artery, in reptiles. *F. of Sommering*, in the eye: a rounded elevation in the centre of the posterior portion of the retina: named from being supposed to be a foramen; also called Yellow-spot. *F. of Vesalii*, in the greater wing of the sphenoid bone. *F. of Winslow*, between the stomach and liver.

Foraminifera, (for-ā-min-if'er-a). [L. *foramen*, hole; *fero*, I bear.] Animals belonging to Rhizopoda, usually living in perforated shells, and having long filamentous pseudopodia. Classified according to texture of shell rather than manner of growth. Classified by D'Orbigny, Carpenter, and others.

Force, (fōrs). [L. *fortis*, strong.] The cause of motion: measured by the velocity and mass of the moving body: called pressure, and measured by weight, when acting vertically downwards. *F. pump:* to pump up water, &c, against gravitation. *F. of gravity: v.* Gravitation. *F. of running water:* 3 in. per second moves fine clay, 12 in. fine gravel, 24 in. small pebbles, 36 in. stones as large as eggs.

Forces, (fōrs'ez). [Force, *q.v.*] Plural of Force, *q.v.* *Molecular F.*, *v.* Molecular. *Polygon of F.*, a diagram representing a number of forces, acting upon a point in equilibrium, consisting of a polygon, of which each side represents one of the forces; the direction of the force is indicated by the direction of the line, and the amount of the force by its length. *Triangle of F.*, a polygon of forces, in which there are but three forces.

Forest, (for'est). [*Foresta*, the Italian word.] *F. Bed of Norfolk*, with bones of elephant, extending 40 miles. *F. flies*=Hippobosca, *q.v.* *F. marble*, a bed of sandstone belonging to Lower Oolite: also called Bath Oolite.

Forficula, (for-fik'ū-la). [The Latin word.] 1. = Earwig, *q.v.* 2. Small forceps, in insects, &c.

Forget-me-not = Myosotis palustris, a small herb.

Formaldehyde, (form-al'dē-hīd). [Formic and Aldehyde, *q.v.*] = CH_2O; also called formic aldehyde and methylic aldehyde, obtained from hydrogen and carbon dioxide. *v.* Aldehydes.

Formamide, (form'a-mīd)=CH_3NO: a colourless liquid, ammonia in which one equivalent of H is replaced by one of CHO, obtained by heating ethyl formate and dry ammonia.

Formates, (form'āts). [Formic, *q.v.*] Salts of formic acid.

Formations, (for-mā'shunz). A number of rocks that are alike in composition, age, or origin. *Aqueous F.*, *v.* Aqueous. *Fresh-water F.*, found in lakes and estuaries, often of great thickness, but usually of small extent. *Lacustrine F.*, formed at the bottom of lakes. *Marine F.*, formed in seas. *Metalliferous F.*, *v.* Metalliferous. *Stratified F.*, *v* Strata, *v.* Aqueous. *Unstratified F.*, *v.* Unstratified. *Volcanic F.*, *v.* Volcanic.

Formene, (for'mēn). [Formic, *q.v.*] = Methane, *q.v.*

Formiates, (for'mi-āts.) [Formic, *q.v.*]=Formates.

Formic, (for'mik). [Formica, *q.v.*] *F. acid* =CH_2O_2: the simplest organic acid, obtained from red ants, by oxidation of organic bodies, or by synthesis of hydrogen and carbon dioxide; a fuming corrosive liquid. *F. aldehyde*=Formaldehyde. *F. ether*=$(C_2H_5)CHO_2$ =Ethyl Formiate. *F. ethers*=Formiates of methyl, ethyl, tetryl, &c.: formic acid in which the basic hydrogen has been replaced by an alcoholic radicle.

Formica, (for'mi-ka). [The Latin name.]=

Ant, *q.v.*: an insect belonging to Hymenoptera.

Formicidæ, (for-mĭ'si-de). [Formica, *q.v.*]= Ants: insects living in communities, belonging to Hymenoptera.

Formionitrile, (for-mi-ō-nī'trīl). [Formyl and Nitrogen, *q.v.*]=CHN=Hydro-cyanic acid, *q.v.* Formamide, from which the elements of water have been removed. *v.* Nitriles.

Formula, (for'mū-la). [The Latin word.] A general expression, usually in symbols. Ex. H_2O is the formula for water; CNH that of prussic acid, &c.

Formulæ, (for'mū-lē). [The Latin word.] General expressions, usually in symbols, used in chemistry, mathematics, mechanics, &c. *Empirical F.* express the actual result of a given experiment. *Rational F.* express this result in a form denoting some theory. *Dental F.* express the normal number and arrangement of the teeth, *v.* Dental formulæ. *F of motion:* $v=ft$: $s=\frac{1}{2}ft^2$: $v^2=2fs$: f=rate of acceleration: t=time.

Formulaic equations,(for-mū-lā'ik). [Formula, *q.v.*] Those of which one member is readily seen to be the same as the other, but in a different form: ex. $a^2-b^2=(a \times b)(a-b)$.

Formyl, (for'mil). [Formic acid, *q.v.*]=CHO =Radicle of formic acid, not known in a separate form, formerly also used for Xylyl, *q v.*

Formylia, (for-mĭ'li-a). [Formyl, *q.v.*]=Ethylenia, *q.v.*

Fornix, (for'niks). [L. *fornix*, arch.] A lamella of white fibrous matter in the brain, beneath the corpus callosum.

Forschammer's regions. Of sea water. *v.* Regions.

Forsterite, (fors'ter-īt). [Mr. Forster.] A mineral, chiefly silicate of magnesium.

Fortification, (for-ti-fi-kā'shun). [L. *fortis*, strong; *facio*, I make.] 1. The science and art of fortifying towns, &c. 2. The buildings intended for defence.

Fortin's barometer. A more portable modification of the cistern-barometer.

Fortuna, (for-tū'na). [Classical.] No. 19 of the minor planets, *q.v.*

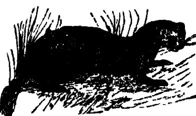
Fosse, (fos). [L. *fossa*, ditch.] 1. A ditch or moat. 2. Used in anatomy for any cavity in a bone, &c.

Fossil, (fos'sil). [L. *fossilis*, dug out.] 1. The remains of any organic substance that has been buried for a long period in the earth. 2. The traces, such as casts, of any such substance. *F. botany:* period of Acrogens= Silurian, Carboniferous, and Permian rocks; of Gymnosperms=Lower and middle Secondary rocks; of Angiosperms=Cretaceous and Tertiary rocks. *F. flax:* a loose silky fibrous variety of asbestos. *F. flour:* remains of infusoria; a siliceous mealy earth, used for fireproof bricks. *F. plants:* preserved by casts, carbonization, infiltration, and petrifaction. *F. paper:* a variety of asbestos, named from its appearance. *F. screws:* casts of the interior of spiral univalve shells. *F. vertebrata:* mammalia, as far back as Upper Trias rocks; birds, as far back as Upper Oolite; reptilia, as far back as Carboniferous rocks; fishes, as far back as Lower Ludlow. Cave fossil and semi-fossil remains of Elephas, Rhinoceros, Ursus, Hyæna, and Man, *q.v.*

Fossiliferous, (fos-sil-if'er-us). [Fossil, *q v.*; L. *fero*, I bear.] *F. formations*=Aqueous formations, *q.v.*

Fougasse, (fō'gas). [The French word.] A small mine, used to destroy walls, &c., under which it is sunk.

Foumart, (fō'mart). [F. *fouine*, marten; and marten, *q.v.*]=Mustela, *q v.*; the polecat.


Foumart

Fountain,(foun'tān). [L *fons*, fountain.] A small stream of water rising from the ground. *F fishes*= Ctenophora: whose cilia produce small fountain-like currents *Hero's F.*: an artificial fountain of water, caused by the pressure of air

Fouquieraceæ, (fō-ke-rā'se-ē). [M. Fouquiere] Mexican plants, trees, and shrubs; formerly included in Portulaceæ.

Fourth, (forth). In music, the interval between any note and the fourth note above it. *F nerve*=Trochlear nerve, *q.v.*

Fousel oil, (fū'zel).=Amyl alcohol, *q.v.*

Fovea, (fō've-a). [L. *fovea*, the pit.] Most sensitive point in retina of eye of man and apes; a minute circular pit in the macula lutea, where the vision is most distinct.

Fovilla, (fo-vil'la). [L. *foveo*, I nourish.] A fluid, containing starch granules and oily globules, found in pollen.

Fowl, (fowl). [*Fugol*, the A.-S. name.]= Gallus domesticus, *q v.*

Fowlerite, (fowl'er-īt). [Mr. Fowler.] A zinciferous variety of Rhodonite.

Fox, (foks). [The A.-S. name.]=Vulpes: a carnivorous, burrowing, dog-like quadruped, having a bushy tail. *Arctic F* =Vulpes lagopa


Fox.

Fox-bat = Pteropus personatus: a bat, named from its fox-like head.

Fox-glove=Digitalis, *q.v.*: an herb, named from the shape of its flowers.

Fox-grapes. Plants of N. America, belonging to Vitaceæ.

Fox-shark = Alopecida =Carcharias vulgaris, called also sea fox. *v.* Shark.

Foxtail grass =Alopecurus, *q.v.*

Fracastorius, (fra-kas-tō'ri-us). A mountain peak in the moon.


Fox-glove.

Fraction, (frak'shun). [L. *frango*, I break.] A portion: expressed by two numbers, as $\frac{1}{2}$, $\frac{5}{8}$, $\frac{11}{7}$, &c., of which the lower number, the denominator, expresses the number of

equal parts into which the whole of a given unit is divided; and the upper, the numerator, expresses the number of these that are taken. *Continued F.* of the form—

$$\cfrac{1}{a+\cfrac{1}{b+\cfrac{1}{c+1, \&c.}}}$$

Improper F., in which the numerator is greater than the denominator. *Vanishing F.*, in which numerator and denominator both become 0. *Proper F.*, in which the numerator is less than the denominator. *Simple F.*, in which the numerator and denominator are whole numbers. *Complex F.*, in which the numerator or denominator is a fraction, as $\frac{2}{1\frac{1}{4}}$, $\frac{1\frac{1}{4}}{3}$, $\frac{1\frac{1}{4}}{2\frac{1}{4}}$, &c. *Compound F.*, a fraction of a fraction, as $\frac{1}{2}$ of $\frac{2}{5}$. *Vulgar F.*, in which both numerator and denominator are expressed, as $\frac{1}{2}$. *Decimal F.*, in which the denominator is a power of 10, and is not expressed except by the notation of the numerator, as ·5.

Fragaria, (frā-gā'ri-a). [L. *fragrans*, fragrant.] =Strawberry: an herb with edible fruit, belonging to Rosaceæ.

Francoaceæ, (fran-kō-ā'se-ē). [M. Franco.]= Francoads: stemless herbs, with numerous small seeds, belonging to Ericales.

Francolite, (fran'kō-līt). [*Wheal Franco*, a Cornish mine.] A variety of Apatite, *q.v.*

Frangulin, (fran'gu-lin). $C_{20}H_{20}O_{10}$: a yellow substance obtained from bark of Rhamnus frangula.

Frangulic acid, (fran'gu-lik) $C_{14}H_8O_4$: a crystalline acid substance from bark of Rhamnus frangula.

Frankenia, (fran-kē'ni-a). [John Frankenius.] =Sea-heath: a plant found in salt marshes.

Frankeniaceæ, (fran-ke-ni-ā'se-ē). [Frankenia, *q.v.*] Herbs, found on shores, with small flowers, belonging to Violales.

Frankincense, (frang'kin-sense). A gum-resin obtained from Amyridaceæ, Croton, and other plants.

Franklin's theory of electricity. That it is a subtle, imponderable fluid, present in all substances, the amount of which is increased in some and diminished in others by friction.

Franklinite, (frank'lin-īt). [Dr. Franklin.] A mineral, chiefly oxides of iron, manganese, and zinc.

Franklinic electricity=Frictional electricity.

Fraunhofer's lines, (frown'hof-er). [Herr Fraunhofer of Bavaria.] The dark lines in the solar spectrum, of which there are several thousands. *v.* Spectrum.

Fraxin, (fraks'in). [Fraxinus, *q.v.*] $C_{16}H_{18}O_{10}.H_2O$: a crystalline substance obtained from the bark of the ash, resembles esculin; also called Paviin.

Fraxinus, (fraks'i-nus). [The Latin name.] =Ash: a tree, belonging to Oleaceæ, the timber of which is tough and elastic. Flowering Ash=Ornus, *q.v.*

Freestone, (frē'stōn). A general term for any stone which can be cut easily in any direction, and which has no distinct cleavage. Sometimes confined to sandstone, but also used for sandstones, limestones, and even granite.

Freezing, (frē-zing). [A.-S. *freosan*, cold.] The solidification of a liquid, as the conversion of water into ice. *F. mixtures:* compounds which, when becoming liquid, absorb heat, and so cool any object in contact with them. Ex. Snow and salt: phosphate of sodium and nitric acid. *F. point:* of fresh water=32° F.=0° C; of sea water= 2·25° C=27·4° F.

Freia. No. 76 of the minor planets, *q.v.*

Freibergite, (frī'ber-gīt). [Freiburg.] A variety of Tetrahedrite.

Freieslebenite, (frēz'le-ben-īt). [Herr Freiesleben.] A mineral, chiefly lead, silver, stibium, and sulphur.

French. *F. bean* = Phaseolus vulgaris. *F. boiler*=Elephant boiler: one large and two smaller cylinders connected by transverse pipes. *F. chalk*=A variety of talc. *F. weights and measures*, *v.* Metric system. *F. unit* of electrical resistance: 1 kilometre of iron wire 4 mm in diameter=9 ohms nearly. *F. polish* =A solution of gum shellac in alcohol. *F. sole*=Solea pegusa. *F. gurnard*=Trigla lineata. *F. sardine*=Young pilchard.

Frenelites, (fren'e-līts). Fossil remains of coniferous plants, found in Lower Clay, in Kent.

Fresco, (fres'kō). [It. *fresco*, fresh.] Painting in water colours on wet plaster. *Dry F.* on dry plaster. *cf.* Tempera. *v.* Painting.

Fresnel's rhomb, (frā'nel). [M. Fresnel.] An instrument, essentially a rhomb of glass, for the circular or elliptical polarization of light, invented by M. Fresnel.

Friable, (frī'a-bl). [*Friabilis*, the Latin word.]=Pulverulent: easily reduced to powder.

Friar-birds. An Australian variety of honey-eaters.

Friction, (frik'shun). [*Frictio*, the Latin word.] Resistance to motion, caused by roughness. *Statical F.:* the resistance which tends to prevent the motion of a body at rest. *Dynamical F.:* the resistance which diminishes the velocity of a moving body. *Coefficient of F.*=$\frac{F}{P}$: where F=Friction. P. =pressure. *F. wheels:* small wheels interposed to reduce friction.

Frictional electricity. *v.* Electricity.

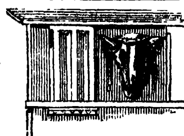
Fries's classification of plants: according to fruits.

Dicotyledons—
- Corolliforæ.
- Thalamiforæ.
- Calyciforæ.
- Incompletæ.

Monocotyledons.

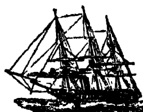
Cryptogams—
- Heteronemeæ.
- Homonemeæ.

Frieze, (frēz). [*Frise*, the French word.] The portion of an entablature, usually sculptured, above the architrave and below the cornice.


Frieze.

Friga. No. 77 of the minor planets, *q.v.*

Frigate, (frig'āt). [*Fregate*, the French word.] A large vessel of war with two decks. *F. bird*=Tachypetes: a bird, belonging to Natatores, having very long wings and tail, and great power of flying.


Frigate.

Fringe-myrtles = Chamælauciaceæ, *q.v.*

Fringilla, (frin-gil'la). [L. *fringilla*, chaffinch.] Finches: small song birds, the type of Fringillidæ. *F. spinus*=Barley bird. *F. cœlebs*=Chaffinch.]

Fringillidæ (frin-jil'i-dē). [Fringilla, *q.v.*] Finches, larks, &c.: perching birds, with short thick beaks, belonging to Insessores.

Fringing reef=Coral reef: when apparently an extension of the coast.

Frisians, (friz'i-anz). A European race: the early inhabitants of Friesland and Western Holland generally.

Fritillary, (frit-il'la-ri)=Argynnis: a butterfly.

Fritzscheite, (fritz'shīt). [M. Fritzche.] A mineral resembling Uranite.

Frog, (frog). [*Frogga*, the A.-S. name.]=Rana: a small hybernating amphibious animal, belonging to Batrachia, which is mostly in the tadpole form when young. There are 130 genera of frogs, and 600 species: they are scarce in Africa, and unknown in New Zealand. *Tree F.*=Hyla. *F. bit*=Hydrocharis. *F. crab*=Ranina: can climb trees, &c., found on islands in Indian Ocean. *F. fishes*=Chironectes: a fish belonging to Telostei. *F. hoppers*=Cuckoo-spits, *q.v.*

Frond, (frond). [L. *frons*, leaf.] Combined stem and leaf, as in ferns.

Frondicularia, (fron-di-ku-lā'ri-a). [Frond, *q.v.*] Fossil remains of Foraminifera, found in Chalk and Gault.

Frontal, (fron'tal). [L. *frons*, forehead.] In vertebrate animals, generally the upper part of the third cranial segment.

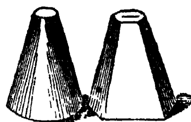
Frugivorous, (frō-jiv'o-rus). [L. *frux*, fruit; *voro*, I eat.] Feeding upon fruits.

Fruit, (frūt). [*Fructus*, the Latin word.]= 1. Ovary and seeds: the ripened pistil of a flower, containing the ovules or seed-buds. 2. The edible portion of fruits, consisting chiefly of sugar and water, with a small quantity of some free acid. *Compound F.*: a number of carpels.

Fruit-sugar = Lævulose=$C_6H_{12}O_6$; obtained from fruits.

Fruits, classification of. *Dry indehiscent, one seeded:* nut, achenium, schizocarp. *Dry dehiscent capsules:* follicle, legume, silique, capsule, pyxidium. *Succulent, indehiscent:* drupe=Stone fruits, berry. *Succulent dehiscent:* dehiscent capsule and berry.

Frustum, (frus'tum). [The Latin word.] The lower portion of a regular solid, the upper portion having been removed.


Frustum.

Fucaceæ, (fū-kā'se-ē) [Fucus, *q.v.*]=Sea-wracks: aquatic plants, some very large, multiplied by external spores, forming a primary division of Algales.

Fucoides, (fū-koi'dēz.) [Fucus, *q.v.*; Gk. *eidos*, form.] Fossil remains of plants, found in Lower Silurian rocks.

Fucus, (fū'kus). [L. *fucus*, a lichen.] An aquatic plant, the type of Fucaceæ.

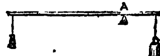
Fucusamide, (fū-kū'sa-mīd). [Fucus and Amide, *q.v.*] $C_{15}H_{12}N_2O_3$: a crystalline substance obtained from fucusol by the action of ammonia.

Fucusine, (fū'ku-sīn). [Fucus, *q.v.*] $C_{15}H_{12}N_2O_3$: a base obtained from fucusamide.

Fucusol, (fū'ku-sol). [Fucus, *q.v.*] $C_5H_{10}O_2$: obtained from fucus and other sea-weeds by sulphuric acid.

Fuel, (fū'el). [F. *feu*, fire.] Wood, turf, peat, coal, lignite, hydrogen, &c.: any combustible matter used for firing.

Fulcrum, (ful'krum). [The Latin word]. A fixed point in a lever, or upon which it is supported, and about which it is free to turn.



A, Fulcrum.

Fulgora, (ful'gō-ra). [L. *fulgor*, brightness.]=Lantern-fly: an insect belonging to Hemiptera.

Fulgurites, (ful'gū-rītz). [L. *fulgur*, lightning.] Sand tubes vitrified, and probably formed, by lightning.

Fulica, (fū'li-ka). [The Latin name.]=Coot: an aquatic bird, belonging to Grallatores.

Fuligula, (fu-lig'u-la). [L. *fuligo*, soot.]= Pochard, &c.: duck-like birds, the type of Fuligulinæ, probably named from the dark colour of some of the feathers.

Fuligulinæ, (fū-lig-ū-lī'nē). [Fuligula, *q.v.*]= Sea ducks: a family of birds belonging to Natatores.

Fuller's earth, (fōl'lerz)=An argillaceous bed, with many fossil mollusca, belonging to the Oolitic strata: composed chiefly of hydrous silicate of alumina, some varieties of which are included in Smectite, and some in Kaolinite. Is useful because of its property of absorbing grease. *F. teasel*=Dipsacus fullonum: used in fulling. *F. herb*= Saponaria.

Fulling (fōl'ling). [L. *fullo*, fuller.] A process in woollen manufacture, in which the cloth is cleaned and thickened.

Fulminates, (fōl'mi-nāts). [L. *fulmen*, thunder.] $M_2C_2N_2O_2$: Salts of fulminic acid, which, when struck or heated, are explosive: fulminic acid, in which the hydrogen is replaced by a metal, M. *Argentic F.*=Fulmi-

nating silver=$Ag_2C_2N_2O_2$. *Mercuric F.*= Fulminating mercury=$HgC_2N_2O_2$.

Fulminating pane: Glass plate, coated on each side with tin-foil, which, when electrified, can be discharged with a spark: a modification of the Leyden jar.

Fulminic acid, (fŏl-min'ik). [L. *fulmen*, thunder.]=$C_2H_2N_2O_2$= Fulminate of hydrogen: not known separately from Fulminates, *q v.*

Fulminuric acid, (fŏl-min-ū'rik) [Fulminic, *q.v.*]=$C_3H_3N_3O_3$=Isocyanuric acid: an anhydrous crystalline substance obtained from fulminic acid.

Fulminose, (fŏl-min'ōs). Cellulose modified by heat.

Fulminurates, (fŏl-min-ū'rāts). [Fulminuric, *q.v.*] Salts of fulminuric acid.

Fumaramide, (fū'ma-ra-mid). [Fumaryl and Amide, *q.v.*]=$C_4H_6N_2O_2$: Ammonia in which one-third of the hydrogen has been replaced by fumaryl. *cf.* Fumarimide.

Fumarates, (fū'ma-rāts). [Fumaric, *q.v.*] Salts of fumaric acid.

Fumaria, (fū-mā'ri-a). [L. *fumus*, smoke.]= Fumitory: an herb, with small flower, belonging to Fumariaceæ, named from its unpleasant odour.

Fumariaceæ, (fū-mā-ri-ā'se-ē). [Fumaria, *q.v.*]=Fume-worts: brittle herbs, with irregular flowers, belonging to Berberales.

Fumaric acid, (fū'ma-rik). [Fumaria, *q v.*] =Boletic acid=$C_4H_4O_4$; a crystalline acid substance, which exists in Fumaria and other plants; also called Lichenic acid and Paramaleic acid. *F. series*=$C_nH_{2n-4}O_4$= Fumaric and Maleic acids; Citraconic, Itaconic, and Mesaconic acids.

Fumarimide, (fū'ma-ri-mid). [Fumaryl and Imide, *q.v.*]=$C_4NH_2O_2$: ammonia, in which two-thirds of the hydrogen is replaced by fumaryl. *cf.* Fumaramide.

Fumarine, (fū'ma-rin). [Fumaria, *q v.*] A crystalline base found in Fumaria.

Fumarole, (fū'ma-rōl). [*Fumerolle*, the French word.] An opening in a volcanic district, whence escapes smoke, mud, &c.

Fumaryl, (fū'ma-ril). [Fumaria, *q.v.*]= $C_4H_2O_2$: the radicle of fumaric acid, &c.

Fuming, (fū'ming). [L. *fumus*, smoke.] Giving forth vapour. *F. liquor of Boyle*=A compound of sulphides of ammonium. *F. liquor of Cadet*=A compound of cacodyl and oxide of cacodyl. *F. liquor of Libavius*= Tetrachloride of tin.

Funaria, (fū-nā'ri-a). An Urn-moss: a plant belonging to Bryaceæ. *F. hydrometrica*= Cord-moss.

Function, (fungk'shun). [L. *functio*, performance.] 1. A function of a quantity is some other and dependent quantity; thus the diameter of a circle is a function of the radius. *Ax* is a function of *x*, &c. 2. The use to which any organ is adapted.

Fungales, (fun-gā'lez). [Fungi.]= Blights, mildews, toadstools, &c.: cellular flowerless plants, living on decaying organic substances only, and propagated by spores; belonging to Algales. Grow and decay rapidly, have no chlorophyll; do not require light in growth.

Fungi, (fun'ji). [*Fungus*, the Latin word.]= Fungales, *q.v.*

Lindley's classification of F.:—

Hymenomycetes=Mushrooms, &c.
Gastromycetes =Puff-balls, &c.
Coniomycetes =Mildew, smut, &c.
Hyphomycetes =Moulds, &c.
Ascomycetes =Truffles, &c.
Physomycetes =Moulds, &c.

Bach's classification of F.:—

Phycomycetes.
Hypodermiæ.
Basidiomycetes.
Ascomycetes.

Fries's classification of F.:—

Hymenomycetes.
Pyrenomycetes.
Gasteromycetes.
Coniomycetes.

Fungi are also divided into *Sporifera*=Spore-bearing, and *Sporidiifera*=Sporidia-bearing. *Parasitic F.*=Dry-rot, corn-blight, smut, ergot, mildew, &c. *Phosphorescent F.*= Rhizomorpha, Agaricus (some species of), &c.

Fungia, (fun'ji-a). [Fungi, *q v.*] A family of coral polyps, which resemble fungi.

Fungic acid, (fun'jik). [Fungus, *q.v.*] Found in many fungi: probably a compound of other acids, such as the malic and citric, &c.

Fungoid, (fun'goid). [Fungus, *q.v.*; Gk. *eidos*, form.] Fungus-like: resembling mushrooms or other fungi.

Fungology, (fun-gol'o-ji). [Fungus, *q.v.*; Gk. *logos*, discourse.]=Mycology: the science of fungi, their nature and classification.

Fungus, (fung'gus). [The Latin word.] Singular of Fungi, *q.v.*

Funicular, (fū-nik'u-lar). [L. *funiculus*, thin rope.] Slender, cord-like: used for slender processes in plants, animals, &c. *F. curve*= Catenary: the curve in which a perfectly flexible cord would hang when suspended by its extremities.

Funkite, (fun'kit). A variety of pyroxene.

Fur, (fẹr). [*Fourrure*, the French word.] 1. The soft hairy covering of such animals as the beaver and sable: used as a covering in cold climates, because it conducts heat but very slightly. 2. An incrustation, chiefly carbonate of lime, gradually formed in any vessel in which calcareous water is boiled.

Fur-bearing animals. Beaver, ermine, fox, hare, marten, sable, seal, stoat, &c.

Furculum, (fẹr'ku-lum). [D. *furca*, fork.] The V-shaped bone formed by the union of the clavicles: in birds, called the merry-thought.

Furfuramide, (fẹr-fẹr'a-mid). [Furfurol and Amide, *q.v.*]=$C_{15}H_{12}N_2O_3$: a solid combustible substance obtained from furfurol: the amide of furfurol.

Furfuria, (fẹr-fẹr'i-a). [Furfurol, *q.v.*]=Furfurin=$C_{15}H_{12}N_2O_3$: a crystalline alkaline base obtained from furfurol.

Furfurol, (fẹr'fẹr-ol). [L. *furfur*, bran; *oleum*, oil.]=$C_5H_4O_2$; a volatile aromatic oil, obtained from sugar, starch, bran, &c., by treating with dilute sulphuric acid. The aldehyde of pyromucic acid.

Furlong, (fẹr'long). [*Furlang*, the A.-S. word.] A measure of length=one-eight part of a mile=220 yards.

Furnace, (fẹr'nās). A structure in which a fire can be made so as to attain a very high degree of heat: used for smelting, and in manufactures generally. *Blast F.*, *v.* Blast. *Cupola F.*, *v.* Cupola. *Catalan F.*, in which a blast of air is supplied by the action of falling water. *Reverberatory F.*, in which the flames, &c., pass from the fire-place over the metal, &c., before reaching the chimney.

Furze, (ferz). [*Fyrs*, the A.-S. name]=Ulex: a plant with yellow flowers and prickly stem, belonging to Fabaceæ, also called gorse and whin. *Needle F.*=Genista anglica.

Fuscite, (fus'sīt)=Wernerite, *q.v.*

Fuse, (fūz) [L. *fundo*, I pour out] To liquefy a solid, usually by means of heat.

Fusee, (fū-zē'). [F. *fuseau*, spindle.]=Fuse=Fuze. 1. The conical wheel on which in a clock-work train the chain is wound. 2. A means of firing a train of gunpowder or other combustible, usually by a tube filled with powder, &c.



F Fusee.

Fusel oil, (fū'zel) [Ger. *fusel*, bad brandy.]=Fousel oil=Amyl alcohol, *q v.*

Fusibility, scale of: used to determine the degree of fusibility in minerals, &c., bronzite, orthoclase, actinolite, almandine, natrolite, antimonite: these form a series, increasing in ease of fusion.

Fusible, (fū'zi-bl). [Fuse, *q v.*] Capable of being melted or fused. *F. calculus*: a variety of urinary calculus, which is readily fused by the blowpipe. *F. metal*: an alloy of bismuth, lead, and tin, which melts at the temperature of boiling water. *F. white precipitate*: a compound of corrosive sublimate and ammonia

Fusiform, (fū'zi-form). [Fuzee, *q.v.*; and Form.] Thickening from the base to the point.

Fusing point, (fū'zing) [Fuse, *q.v.*]=Melting point: that at which a solid becomes a liquid.

Fusion, (fū'zhun). [Fuse, *q.v.*]=Melting the conversion of the solid to the liquid state.

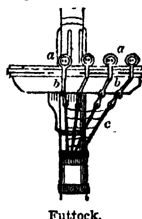
Fustian, (fust'yan). [*Futaine*, the French word.] A coarse thick cotton fabric, of which corduroy and velveteen are varieties.

Fustic, (fus'tik). A yellow dye obtained from wood of Morus tinctoria; also from wood of Rhus cotinus. *v.* Yellow dyes.

Fusus, (fū'sus). [L *fusus*, spindle.] A gasteropod, found fossil in Pliocene strata.

Fusyl, (fū'zil)=C_5H_9: a hydrocarbon.

Futtocks, (fut'toks). [Corruption of foot-hooks.] Timbers forming the sides of a ship. *F. plates*: on the masts for the F. shrouds to pass through. *F. shrouds*: shrouds connecting the top-mast and lower riggings.



Futtock. *aa*, dead-eyes; *bb*, futtock plates; *c*, futtock shrouds

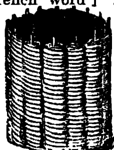
Fuze=Fuse, *q.v.*

G.

Gabbro, (gab'brō). 1. Euphotide: a rock consisting chiefly of diallage and felspar. 2. Used more generally for a variety of composite rocks containing felspar, serpentine, &c.

Gabbronite, (gab'brō-nīt)=Scapolite: a mineral, chiefly silicate of aluminum and soda.

Gabion, (gā'bi-on). [The French word.] A cylinder of basket-work, which may be filled with earth, &c., used for defence in warfare.


Gabion

Gable, (gā'bl). [*Giebel*, the German word.] The upper termination of the end wall of a building when triangular.

Gadidæ, (gad'i-dē), [Gadus, *q.v.*]=Cod, haddock, whiting, &c.: a family of fishes, belonging to Teleostei: have pointed ventral fins near the throat.

Gadflies, (gad'flīz). [Gadfly, *q.v.*]=Tabanidæ: a family of insects belonging to Diptera.

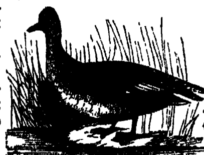
Gadfly, (gad'flī). [A.-S. *gad*, sting; Fly, *q.v.*] =Œstrus bovis: an insect belonging to Diptera, the larva of which is parasitic in the stomach of the horse.

Gadoidei, (gad-oi'dē). [Gadus, *q.v.*; Gk. *eidos*, form.] Gadus, Merlangus, &c.: Cuvier's name for a family of fishes, of which the cod is the type.

Gadolinite, (gad'o-lin-īt). [Prof. Gadolin.] A mineral, chiefly silicate of yttrium.

Gadus, (gā'dūs). [The Latin name.]=Cod: a fish the type of Gadidæ.

Gadwall, (gad'wawl). [A.-S. *gad*, to walk about.]=Chaulodius strepera: a duck-like bird belonging to Anatidæ.


Gadwall.

Gærtner's classification of plants: according to the fruits.

Gage=Gauge, *q v.*

Gahnite, (gan'īt). [Herr Gahn.] Al_2ZnO_2=Automolite: a mineral, chiefly aluminate of zinc.

Galactite, (gal'ak-tīt). [Gk. *galaktikos*, of the colour of milk.] 1. A mineral: a variety of Natrolite. 2. A plant, belonging to Asteraceæ, named from its white veins.

Galactose, (gal'ak-tōs). [Gk. *gala*, milk.]=

$C_6H_{12}O_6$: a crystallisable substance obtained from milk sugar.

Galago, (gal-ā'go)=Otolicnos: an African half-ape remarkable for its activity.

Galanthus, (gal-an'thus). [Gk. *gala*, milk; *anthos*, a flower.]=Snowdrop: an herb, with white flowers, belonging to Amaryllidaceæ.

Galatea, (gal-a-tē'a). No. 74 of the minor planets, *q.v.*

Galaxy, (gal'ak-si). [*Galaxias*, the Greek word.]=Milky-way=Via Lactea: a belt of light in the heavens formed by some 18 millions of stars.

Galbanum, (gal'ba-num). [*Chalbane*, the Greek name.] A gum-resin, named from the plant producing it.

Galbula, (gal'bū-la)=Jacamar: a climbing bird belonging to Halcyonidæ.

Gale, (gāl). *Sweet G.*=Myrica: a plant belonging to Myricaceæ.

Galeoynus, (ga-les'i-nus). [Gk. *galee*, weasel: *kyon*, dog.] Owen's name for the fossil fox discovered by Murchison: an animal intermediate between Canis and Viverra. *v.* Dog-of-the-marsh.

Galena, (ga-lē'na). [The Latin word.]=Plumbic sulphide=PbS=Lead glance: the most common ore of lead, one of the lead group of minerals, crystallising in cubes. *G. limestone*=Upper Magnesian Limestone.

Galenite, (gal'e-nīt). [Galena, *q.v.*] A mineral, chiefly sulphide of lead. *G. group of minerals:* includes galenite, argentite, and realgar, &c.

Galeocerdo, (gal-e-ō-ser'dō). [Gk. *galee*, weasel; *kerdo*, fox.] A shark, known only by fossil teeth, found in Cretaceous and Tertiary rocks.

Galeodes, (gal-e-ō'dez). A spider-like animal belonging to Arachnida, *q v.*

Galeopithecus, (gal-e-ō pi-thē'kus). [Gk. *galee*, weasel: *pithekos*, ape.]=Flying cat, &c.= Dermoptera: insectivorous animal resembling both lemurs and bats.

Galeopsis, (gal-e-ops'is). [Gk. *galee*, weasel; *opsis*, look]=Hemp nettle: a plant, belonging to Labiatæ, named from form of flower.

Galestes, (ga-les'tēz). [Gk. *galee*, weasel.] A mammalian animal, fossil remains of which are found in Purbeck beds.

Gale-worts, (gāl'wurts). [Gale and Wort, *q.v.*] =Myricaceæ, *q.v.*

Galiaceæ, (gal-i-ā'se-ē). [Galium.]=Stellates: herbs, with small flowers, belonging to Cinchonales.

Galilean telescope. A simple telescope of two lenses, an object glass and an eye-piece: named after Galileo its inventor.

Galingale, (gal'in-gāl)=Cyperus longus: an herb belonging to Cyperaceæ.

Galipot, (gal'i-pot). [The French name.] A white resin obtained from Bordeaux turpentine.

Galium, (gā'li-um). [Gk. *gala*, milk]=Bedstraw, *q.v.*: an herb, with small flowers, belonging to Galiaceæ. *G. aparini*=Goosegrass=Cleavers. *G. verum*=Cheese rennet. *G. cruciatum*=Cross-wort.

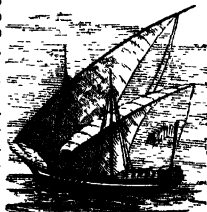
Gall, (gawl). [*Gealla*, the A.-S. word.] 1. Cystic bile: an alkaline liquid formed in the liver. *v.* Bile. 2. Singular of galls, *q.v.* *G. bladder:* an oval sac, near the liver, in which the gall is accumulated. *G. flies:* Cynipidæ: insects belonging to Hymenoptera. *G. fly*=Cynips. *G. nuts*=Galls, *q.v.* *G. stones*=Biliary calculi; stones of very complex composition, containing especially cholochrome and acids formed from the bile.

Gallates, (gal'lāts). [Gallic acid, *q.v.*] Compounds of gallic acid with bases.

Gallein, (gal'lin). [Pyro-gallic acid, *q.v.*]= $C_{20}H_{12}O_7$=Phthalein of pyrogallic acid: a red colouring matter obtained from pyrogallic acid.

Gallery, (gal'le-ri). [*Galerie*, the French word.] 1. A long covered passage. 2 Also used for a long room, especially if used for exhibition of works of art. 3. A passage leading to a mine.

Galley, (gal'li). [*Galere*, the French word.] 1. A low built vessel with one deck. 2. A large open boat. 3. A furnace.


Galley.

Gallic acid, (gal'-lik). [Galls, *q.v.*] =$C_7H_6O_5$: a crystalline acid substance found in gall-nuts and in astringent vegetables.

Gallin, (gal'lin). [Gallein, *q.v.*]= $C_{20}H_{18}O_2$: a base obtained from gallein.

Gallinaceous birds, (gal-li-nā'se-us). [L. *gallina*, fowl.]=Clamatores: fowls, turkeys, grouse, &c.: polygamous graminivorous birds, with fat bodies, building their nests on the ground.

Gallinæ, (gal-lī'nē). [L. *gallina*, fowl.] An order of birds, by Milne Edwards, including all gallinaceous birds.

Gallinula, (gal-lin'u-la). [L. *gallina*, fowl.] A group of wading birds, of which the common water hen is the type.

Galliot, (gal'li-ot). [*Galiote*, the French word.] 1. A kind of bomb-vessel. 2. A small merchant ship.

Gallipoli oil, (gal-lip'ō-li). [Gallipoli in Naples.] An impure variety of olive oil.

Gallium, (gal'li-um).=*G.*: a metallic chemical element.

Gallon, (gal'lon). [*Galon*, the French word.] =277¼ cubic inches: a measure of volume used for liquids, &c.; the quantity of distilled water which weighs 10 lbs. avoirdupois.

Gallotannates, (gal-lō-tan'nāts): [Gallotanic acid, *q.v.*] Compounds of gallotanic acid with bases.

Gallotannic acid, (gal-lō-tan'ik). [Galls and Tannic, *q v.*]=$C_{27}H_{22}O_{17}$: a variety of Tannic acid obtained from gall nuts; also called Tannic acid and Tannin.

Galls, (gawls). [*Gealla*, the A.-S. name.] Excrescences upon oak trees, caused by the deposition of the eggs of gall-fly, composed

chiefly of woody fibre, tannin and gallic acid: used in the manufacture of ink, &c.

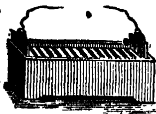
Gallus, (gal'lus). [The Latin name.]=Cock: A poultry-like bird, the type of the Gallinaceous family of birds. *G. domesticus*=Common fowl. *G. ferrugineus*=Javan cock. *G. Temminckii*=Batavian cock. *G. Lafayetii*=Ceylon cock.

Gallyworm, 1. Polydesmus: a worm-like animal, with numerous legs, belonging to Chilognatha. 2. Xylobius sigillariæ: found fossil in Acadia.

Galt=Gault, *q.v.*

Galugo, (ga-lū'go). An animal of the bat kind found in Borneo.

Galvanic, (gal-van'ik). [Galvanism, *q.v.*] Related to galvanism. *G. battery:* a number of connected galvanic cells *G. cell:* a combination of two substances in a liquid which acts chemically upon one more than on the other. *G. electricity* = Chemical electricity. *G. shocks:* sensations caused by a nerve being connected with an inductive coil charged by a galvanic cell, so that it is affected by the currents.


Galvanic Battery.

Galvanised, (gal'va-nīzd). [Galvanism, *q.v.*] Acted upon by galvanism. *G. iron*=Iron coated with zinc.

Galvanism, (gal'van-izm). [Sig. Galvani of Bologna] = Chemical electricity = Current electricity = Voltaic electricity: electricity produced by chemical action, when two substances are combined so as to form a galvanic cell.

Galvanometer, (gal-va-nom'e-tẹr). [Galvanism and Meter, *q.v.*] An apparatus for measuring the intensity of a galvanic current, and indicating its direction, usually by means of an astatic couple; also called a *multiplier*. *Differential G.* measures the difference in the intensities of two currents. *Tangent G.* by which the intensity of the current is measured by the tangent of the angle through which the magnetic needle is deflected. *Thomson's G.:* a reflecting G. originally designed for use on shipboard, in which the needle carries a mirror, in which a beam of light is reflected.

Galvanoscope, (gal-van'o-skōp). [Galvanism, *q.v.*; Gk. *skopeo*, I observe.] An instrument to show the presence of a galvanic current and its direction.

Galvano-thermometer. An instrument for measuring the heating effect of a galvanic current.

Gambir, (gam'bẹr). A Chinese shrub, from the leaves of which a dye-stuff is extracted.

Gamboge, (gam-bōj'). [Cambogia] $C_{60}H_{35}O_{12}$: a gum resin obtained from Garcinia cambogia.

Gamitana, (gam-i-ta'na). A large flat fish, resembling the skate, found in Peru.

Gamma Virginis, (gam'ma vẹr'jin-is). [Gamma and Virgo, *q.v.*] A double star, of which one alternately approaches and recedes from the other. The third star in the constellation Virgo.

Gammarus, (gam'ma-rus). An insect, found in Japan, belonging to Amphipoda. *G. pulex*=Fresh-water shrimp.

Gamogenesis, (gam-o-jen'e-sis). [Gk. *gamos*, marriage; Genesis, *q.v.*]=Sexual reproduction=Homogenesis: occurs when growth is nearly completed or declining. *v.* Genesis. *v.* Development.

Gamopetalæ, (gam-ō-pet'a-lē). [Gk. *gamos*, marriage; Petal, *q.v.*]=Sympetalæ: Brongniart's term for a division of Exogens, belonging to Angiospermeæ, the petals of which are united so as to form a tube.

Gamut=Gammut.

Ganglia, (gang'li-a). Plural of ganglion, *q.v.*

Ganglion, (gang'li-on). [Gk. *ganglion*, knot.] A nervous centre: an accumulation of nerve-cells, capable of giving and receiving impressions

Ganglioneura, (gang-li-ō-nū'ra). [Ganglion, *q.v.*; Gk. *neuron*, nerve.] Ehrenberg's term for Articulata, Mollusca, and the lower animals generally.

Ganglionic nervous system = Sympathetic system, *q.v.*

Gangrene, (gang'rēn). [*Gangraina*, the Greek word.] The first stage of local death. *v.* Mortification.

Gannet, (gan'net). [A.-S. *ganet*, a sea duck.] =Sula: a sea-bird, found near land: belonging to Natatores.


Gannet.

Gannister, (gan'nis-tẹr). A siliceous variety of fire-clay.

Ganocephala, (gan-ō-sef'a-la). [Gk. *ganos*, brightness; *kephale*, head.] A family of reptiles, belonging to Dipnoa, allied to Ganoid fishes, known by fossil remains.

Ganodus, (gan-ō'dus). [Gk. *ganos*, brightness; *odous*, tooth.] A fossil fish, of which there are many species in Great Oolite.

Ganoid, (gan'oid). [Gk. *ganos*, brightness; *eidos*, form.] Having bony scales, covered with enamel.

Ganoidei, (gan-oi'de-ī). [Gk. *ganos*, brightness; *eidos*, form.] A primary division of fishes, including the sturgeon and many extinct genera; having a partially ossified skeleton, and being covered with enamelled bony scales. Approximate to reptiles; now rare, but many fossil.

Ganoine,(gan'oin) [Gk. *ganos*,brightness.] The enamel coating of the scales of ganoid fishes.

Ganymede, (gan'i-mēd). One of the satellites of Jupiter.

Ganomatite, (gan-om'a-tīt)=Goose-dung ore: a mineral, chiefly oxide of iron and cobalt.

Gapers, (gā'pẹrz). Eurylaimidæ: Eastern birds, resembling the American chatterers; have gay plumage, and build closed nests; belonging to Muscicapidæ.

Garboards, (gȧr'bordz). [Probably a corruption of guard-board.] Outer boards on each side of the keel of a ship, forming part of the bottom.

Garcinia, (gar-sĭ'ni-a). [Dr. Garcin.] Trees found in E. India, China, &c.; belonging to Clusiaceæ. *G. mangostana* = Mangosteen tree. *G. cambogia* = Gamboge tree.

Garden. *G. bean* = Vicia faba. *G. beetles* = Carabidæ. *G. fleas* = Halticæ: small jumping beetles, common in Phillippine Islands. *G. mites* = Trombidiidæ. *G. spider* = Epeira diadema: called also the geometric spider, from its radiated web.

Gardenia, (gar-dē'ni-a). [Dr. Garden.] = Cape Jessamine: a plant belonging to Cinchonaceæ.

Gar-fish = Belone vulgaris, also called snipe-eel, sea-needle, and long-nose: a fish belonging to Esocidæ.

Gare-fowl = Alca impennis: a sea-bird, belonging to Natatores.

Gargoyle, (gȧr'goil). [*Gargouille*, the French word.] A projecting water-spout, usually carved more or less grotesquely, common in old Gothic buildings.


Gargoyle

Garlic, (gȧr'lik). [*Garleac*, the A.-S. word.] = Allium: a plant belonging to Liliaceæ. *G. pear* = Cratæva: a plant belonging to Capparidaceæ. *G. mustard* = Sisymbrium alliaria. *Oil of G.* = Sulphide of allyl.

Garnet, (gȧr'net). [*Grenat*, the French word.] A general name for a variety of minerals, chiefly silicates of iron and aluminum, many of which are precious stones. *G. group of minerals*, includes epidote, idocrase, axinite, &c. *Bohemian G.* = Pyrope. *Oriental G.* = *Precious G.* = Almandite = Almandine. *White G.* = Leucite.

Garrulacinæ, (gar-rō-lā'si-nē). [Garrulus, *q.v.*] A family of birds belonging to Corvidæ, of which the jay is the type.

Garrulax, (gar'rō-laks). *G. phœniceum*: an Indian bird = Trochalopteron phœniceum.

Garrulinæ, (gar-rō-lī'nē). [Garrulus, *q.v.*] Magpies, jays, &c.: birds belonging to Corvidæ.

Garrulus, (gar'ru-lus). [The Latin name.] Jay, &c.: a sparrow-like bird, belonging to Corvidæ.

Garrya, (gar'ri-a). [Mr. Garry.] A shrub with pendulous flowers; the type of Garryaceæ.

Garryaceæ, (gar-ri-ā'se-ē). [Garrya.] = Garryads: shrubs, with pendulous flowers, belonging to Garryales.

Garryales, (gar-ri-ā'lēz). [Garrya, *q.v.*] Plants with monochlamydeous flowers and small embryo, forming a division of Diclinous exogens.

Gas, (gas). [*Gaz*, the French word.] 1. An elastic fluid, often so attenuated as to be wholly or nearly invisible, expanding regularly with increase of temperatures, the volume of which is inversely proportional to the pressure. *v.* Expansion. *cf.* Vapour. 2. Also used, specially, for coal gas when used for lighting purposes. *Laughing G.* = N_2O = Protoxide of nitrogen. *Water G.* = Hydrogen obtained by the decomposition of water. *Wood G.* = Carburretted hydrogen obtained by distilling wood. *G. holder* = Gasometer. *G. liquor*: a solution of various compounds of ammonia, obtained in the distillation of coal. *G. meter*: an apparatus for measuring the quantity of gas, measured by volume, which passes through it.

Gasalier, (gas-a-lēr'). [The French word] = Gaselier: a number of gas burners grouped so as to form a central light.

Gaseous, (gā'se-us). [Gas, *q.v.*] Having the form of an elastic vapour: gas-like.

Gasometer, (gas-om'e-tẹr). [Gas and Meter, *q.v.*] = Eudiometer, *q.v.*

Gasometric, (gas-ō-met'rik). [Gasometer, *q.v.*] Relating to the measurement of gases. *G. analysis* = Eudiometry.

Gassendi, (gas-sen'di). A crater in the moon, about 54 miles diameter, enclosed by mountains about a mile high.

Gassiot tubes, (gas'si-ot). [Mr. Gassiot.] = Geissler's tubes, *q.v.*

Gaster, (gas'tẹr). [Gk. *gaster*, belly.] A prefix, meaning stomach or belly.

Gasteromycetes, (gas-ter-o-mī-sē'tēz). [Gaster, *q.v.*: Gk. *mykes*, mushroom] = Puff-balls: a primary sub-division of sporiferous fungi, in which the hymenium is enclosed in an outer sac.

Gasteromyci, (gas-ter-o-mī'si). [Gaster, *q.v.*; Gk. *mykes*, mushroom.] Term proposed for Lycoperdons and similar fungi.

Gasterophilus, (gas-tẹr-of'i-lus). [Gaster, *q.v.*; Gk. *philos*, loving.] = Bot-fly: larvæ found in the stomach of the horse.

Gasteropoda, (gas-tẹr-op'o-da). [Gaster, *q.v.*; Gk. *pous*, foot] = Univalves: a primary division of Mollusca, including limpets, snails, whelks; animals which have a head, with two eyes and two tentacles; a mouth with an odontophore; and a broad ventral disc, called a foot, for locomotion. Divided into *Pulmonifera*, adapted to aerial respiration; and *Branchifera*, adapted to aquatic respiration; found fossil from Lower Silurian till now.

Gasterosteus, (gas-tẹr-os'te-us). [Gaster, *q.v.*; Gk. *osteon*, bone.] Stickleback: a small fish resembling the gurnard. *G. ductor* = Pilot-fish: a small blue fish, attending the shark.

Gasterozoa, (gas-tẹr-ō-zō'a). [Gaster, *q.v.*; Gk. *zoon*, animal.] Fitzinger's term for Acalephæ, Zoophyta, and Infusoria.

Gastornis, (gas-tor'nis). [*Gaston*, proper name; Gk. *ornis*, bird.] A bird known by fossil remains.

Gastræada, (gas-trē'a-da). [Gaster, *q.v.*; Gk. *eidos*, form.] Primitive stomach animals: many celled animals with a mouth and an intestine: the primary form of worms and zoophytes.

Gastric, (gas'trik). [Gaster, *q.v.*] *G. acid* = *G. juice.* *G. chamber*: a cavity serving the purpose of a stomach. *G. glands*: secrete gastric acid. *G. juice*: an acid secretion of the stomach, which converts the food into chyme.

Gastrimargus, (gas-tri-mâr′gus)=Lagothrix: an American monkey.

Gastrobranchus, (gas-trō-brang′kus), [Gaster and Branchiæ, *q v.*]=Myrine: also called Borer, *q.v.*, and Glutinous Hag; a fish belonging to Myxinidæ.

Gastrophysaria, (gas-trō-fī-sā′ri-a). [Gaster, *q.v.*, Gk. *physa*, breath)=Annelidaria: De Blainville's term for Sipunculus, &c.

Gauge, (gāj). [*Jauge*, the French word.] 1. A measure: a standard of measurement. 2. Size, especially of a cylinder, such as the bore of a gun. *Narrow G.*, of railway, 4 ft. 8½ in. between the internal edges of the rails. *Broad G.*, 7 ft. between the rails.

Gauging, (gā jing). Measuring by reference to a standard gauge· especially used for the estimation of the volume of casks, &c.

Gault, (gawlt) The lowest of the Upper Cretaceous beds: a clayey rock between the Upper and Lower Greensands

Gaultherates, (gawl′tẹr-āts). Salts of Gaultheric acid.

Gaultheria, (gawl-tē ri-a). [Mr. Gaulthier.] A plant belonging to Ericaceæ.

Gaultheric acid,(gawl′tẹr-ik). [Gaultheria,*q.v.*] $=C_8H_8O_3$: a fragrant oil obtained from the flowers of Gaultheria procumbens. Also called Oil of Winter-green and Methyl-salicylate.

Gavial, (gā′vi-al). [*Gavial*, the Hindoo name.] A fresh-water crocodile, found in East Indian rivers. Fossil remains of G. found in Middle Eocene rocks.

Gay Lussac's barometer. A modification of the siphon barometer, invented by Gay Lussac, a French chemist.

Gay lussite, (gā-lū′sīt). [M. Gay Lussac.] A mineral, chiefly hydrated carbonate of soda and lime.

Gazelle, (ga-zel′). [The French name.]= Gazella=Antelope dorcus. *v.* Antelope.


Gazelle.

Gazoline, (gaz′o-lin). [Gas, *q.v.*] A mineral hydrocarbon, obtained from petroleum.

Gear, (gēr). [A.-S. *geara*, furniture.] Machinery: especially smaller portions intended to communicate motion between principal parts.

Gearing,(gēr′ing). [Gear, *q.v.*]=Gear, *q.v.*

Gecarcinus, (jē-kâr′si-nus). [Gk. *ge*, earth; *karkinos*, crab.]=Land crab of West Indies: an animal belonging to Brachyura, capable of both aerial and aquatic respiration; migrates to sea to lay its eggs.

Gecko, (gek′o). [From its sound.] = Gecko verus = Hemidactylus maculatus, and many others: a small lizard, easily domesticated, found in Ceylon.


Gecko.

Geckotidæ, (ge-kot′i-dē). [Gecko, *q.v.*] A family of lizards, of which the Gecko is the type.

Gedge's alloy. A compound of copper, iron, and zinc, named after its inventor; used for covering the bottoms of ships.

Gedrite, (ged′rīt). [Gedre, in Spain] A mineral, chiefly silicate of iron, magnesium, and aluminum.

Geese, (gēs). [Plural of goose]=Anserinæ: aquatic birds belonging to Natatores. Probably all descended from Anas ferus=Grey lag goose.

Gehlenite, (geh′le-nīt). [Herr Gehlen.] A mineral, chiefly silicate of alumina and lime.

Geic acid, (gē′ik). [Gk. *ge*, the earth.]= $C_{20}H_{12}O_7$: one of the constituents of the mould of decaying wood

Gein, (gē′in) [Gk. *ge*, the earth.]=Humus: decaying woody matter

Geisers, (gī′zẹr). [The Icelandic name.]= Geysers, *q.v.*

Geissler's tubes, (gīs′lẹr). glass tubes containing rarefied gas, which glow brilliantly when the secondary currents of an induction coil are passed through them, each gas having a distinctive colour. *G. machine:* a modification of the Torricelian vacuum applied as an air-pump.

Gelasimus, (je-las′i-mus). [Gk. *gelasimos*, ludicrous] = Fighting crab: a crab-like animal found in Borneo, &c One species has a claw larger than its body.

Gelatigenous, (jel-a-tij′en-us). [Gelatin, *q.v.*; Gk. *gennao*, I produce.] Capable of producing gelatin. *G. substances:* gelatin, chondrin, ossein, &c.

Gelatin, (jel′a-tin). [*Gelatine*, the French word.]=$C_{13}H_{10}N_2O_5$: glue, size, isinglass, &c: a compound found only in animal substances.

Gelder-rose, (gel′dẹr). [Corruption of Gueldres.] = Viburnum opulus: a shrub; also called snow-ball tree, belonging to Caprifoliaceæ.

Gelidium, (jel-id′i-um). An edible sea-weed, belonging to Fucaceæ.

Gelocus: an extinct Mammalian animal, known by fossil remains.

Gem, (jem). [*Gemma*, the Latin word.] Singular of gems, *q.v.*

Gemelli muscles, (je-mel′li). [*L. gemellus*, paired.] Two small muscles in the thigh.

Gemini, (jem′i-ni). [*L. gemini*, twins.]=The Twins: the third sign of the Zodiac, containing the stars Castor and Pollux.



Gemini.

Geminorum, (jem-in-ō′rum). [The Latin word.] = Of the Twins: belonging to the constellation of that name.

Gemitores, (jem-i-tō′res). A family of birds belonging to Columbidæ.

Gemma, (jem′ma). [The Latin word.] 1.

Alphecca, the chief star of Corona Borealis. 2. Singular of Gemmæ, *q.v.*

Gemmæ, (jem'mē). [The Latin word.] Buds which separate before development, common in polypes and plants. *v.* Gemmation. Also called bulbs, bulblets, stolons, &c.

Gemmation, (jem-mā'shun). [L. *gemma*, bud.] =Budding: a form of development by buds; common in plants, polypes, &c. *Continuous G.*: in which the individuals remain connected with the parent. *Discontinuous G.*: in which they are separated and distinct.

Gemmiparity, (jem-mi-par'i-ti). [Gemmiparous, *q.v.*] = Budding. A variety of asexual generation in which the individuals are developed from buds which arise on the body of the parent.

Gemmiparous, (jem-mip'a-rus). [L. *gemma*, bud, *pario*, I bring forth.] Relating to gemmiparity.

Gemmule, (jem'mūl). [L. *gemmula*, a little bud.] A vital mass separated from the parent, and capable of development into a single individual resembling the parent.

Gems, (jemz). [*Gemma*, the Latin word.] 1. =Jewels: stones remarkable for their lustre, colour, rarity, &c., such as diamonds, emeralds, pearls 2.=Gemmæ, *q.v.* *Artificial G.*: made of a variety of glass called Strass.

Geneagenesis, (jen-e-a-jen'e-sis). [Gk. *genea*, race, *genesis*, generation.]=Metagenesis: a variety of gemmation. *v.* Genesis.

Genera, (jen'ẹr-a). [Genus, *q.v.*] Plural of Genus, *q.v.*

Generation, (jen-ẹr-ā'shun). [*Generatio*, the Latin word.] The reproduction of organic beings: propagation. In *oviparous G.* the eggs are extruded and hatched independently. In *ovo-viviparous G.* the eggs are hatched before extrusion In *viviparous G.*=Uterogestation: the young are born alive. *Asexual G.*: in which the union of two sexes is not concerned. *v.* Fissiparity, Gemmation, Abiogenesis, Heterogenesis. *G. of heat:* the conversion of motion into heat; the change from motion of bodies into motion only of molecules; *v.* Heat. *G. of conics:* the formation of a cone by the revolution of a triangle; *v.* Triangle. *G. of winds*, *v.* Winds.

Generations, (jen-ẹr-ā'shunz). *Alternation of G.*=Development by means of nurse-forms in Acalephæ, Entozoa, &c.

Generic, (jen-er'ik). Connected with or relating to Genus, *q.v.*

Genesis, (jen'e-sis). [The Greek word.] Multiplication of individuals. *Bio-G.*: the origin of life only from life. *Abio-G* = Spontaneous generation. *Homo-G.*= Biogenesis: when the child resembles the parent. *Hetero-G.* = Xeno-G. = Abio-genesis. *Meta-G.*=Geneagenesis=Gemmation, with fission, when the produced zooid is dissimilar to the producing zooid. *Gamo-G.*=Sexual reproduction in which contact of ovum and spermatozoon is needed. *Agamo-G.*=Reproduction in which contact is not needed. *Genea-G.*=Metagenesis.

Genet, (jen-et'). [The French word.] 1. Viverra: a small weasel-like animal; also called Genetta. 2. A small horse.


Genet.

Genetic, (je-net'ik). [Genesis.] Relating to the mode of production or origin. *G. spiral:* a helix running round the stem of a plant, formed by the points of growth of all the branches.

Geneva, (je-nē'va). [F. *genievre*, juniper.] A spirit obtained from the distillation of grain and juniper berries.

Geneva stop. In a train of clock-work; intended to prevent overwinding.

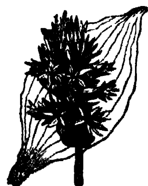
Genista, (jen-is'ta). [The Latin name.] 1. A shrub belonging to Fabaceæ. *G. tinctoria* =Woad=Dyer's weed. *G. anglica*=Needle furze=Petty whin.

Genitalia, (jen-i-tā'li-a). [*Genitalis*, the Latin name.] The sexual organs: a general term for the whole of the organs engaged in reproduction either in animals or plants.

Genou, (zha-nō). [The French word] Knee: often used for a bend, in fortification, ship-building, &c.

Genthite, (gen'tīt). [Herr Genth.] A mineral, chiefly hydrated silicate of iron and magnesium.

Gentian, (jen'shun). [Gentius, King of Illyria.] = Gentiana: an herb belonging to Gentianaceæ.


Gentian.

Gentianaceæ, (jen-shi-a-nā'se-ē) [Gentiana, *q.v.*] = Gentian-worts; herbs, with ribbed leaves and regular flowers, belonging to Gentianales.

Gentianales, (jen-shi-a-nā'lēz). [Gentiana, *q.v.*] Plants, with dichlamydeous monopetalous flowers, forming a division of Perigynous Exogens.

Gentianic acid, (jen-shi-an'ik). [Gentiana, *q.v.*] Obtained from Gentian.

Genu=Genou, *q.v.*

Genus, (jē'nus). [The Latin word.] A group of species forming a sub-division of a family. *v.* Tables.

Geocalyx. A plant belonging to Hepaticæ.

Geocentric, (jē-ō-sen'trik). [Gk. *ge*, earth; Centre, *q.v.*] Having the earth as a centre; reckoned from the centre of the earth.

Geocerellite, (jē-ō-ser'el-līt). [Geocerite, *q.v.*] A white brittle mineral obtained from geocerite.

Geoceric acid, (jē-ō-ser'ik). [Gk. *ge*, earth; *keros*, wax.] $C_{28}H_{56}O_2$: resembles Cerotic acid, obtained from earthy lignite.

Geocerite, (jē-ō'se-rīt). (Gk. *ge*, earth; *keros*, wax.] $C_{28}H_{56}O_4$: a white wax-like mineral obtained from coal.

Geocorisa, (jē-ō-kor-ī-sa). [Gk. *ge*, earth;

koris, bug.]=Land bugs: insects belonging to Heteroptera.

Geocronite, (jē-ok'rō-nīt). [Gk. *ge*, earth; *kronos*, a name for lead.] A mineral, chiefly sulphide of lead and antimony.

Geodephaga, (jē-ō-def'a-ga). [Gk. *geodes*, earthy; *phago*, I devour.] Carnivorous ground beetles, a primary division of Coleoptera, including Tiger beetles.

Geodesy, (jē-od'e-si) [*Geodesie*, the French word.] The measurement of the earth's surface or any large portion of it.

Geodetic line, (jē-o-det'ik). [Geodesy, *q.v.*] A base line used in geodesy.

Geogeny, (jē-oj'e-ni) [Gk. *ge*, earth; *gennao*, I produce.] The science of the action of the molecules of a celestial mass on each other, and of the action upon all of force radiated from other such bodies: includes Biology, Geology, Psychology, &c.

Geognosy. [Gk. *ge*, earth; *gnosis*, knowledge.] =Mineralogy.

Geography, (jē-ŏg'ra-fi). [*Geographia*, the Greek word.] The science of the surface of the globe and its inhabitants.

Geology, (jē-ol'o-ji). [Gk. *ge*, earth; *logos*, discourse.] The science of the changes that have taken place in the organic and inorganic kingdoms of nature, and of the causes and results of these changes: the anatomy and physiology of the earth.

Geometræ, (jē-om'e-trē) = Loopers: a subdivision of Lepidoptera, named from alternately looping and stretching the body in progression: includes a large number of species.

Geometrical, (jē-o-met'ri-kal). [Geometry, *q.v.*] Relating to geometry. *G. progression*: the regular increase or decrease when a given number is continually multiplied or divided by the same number, as in 1, 3, 9, 27, &c.; or 64, 16, 4, 1.

Geometridæ, (jē-o-met'ri-dē) = Emeralds: a family of moths belonging to Geometræ.

Geometry, (jē-om'e-tri). [Gk. *ge*, earth; *metron*, measure.] 1. The science of form, and of the relations between regular figures. 2. Used specially for the system of geometry, called "The Elements," by Euclid. *Analytical G.*=*Algebraic G.*: a branch of Mathematics, *q.v.*

Geomyricite, (jē-ō-mī'ri-sīt). [Gk. *ge*, earth; Myricine, *q.v.*]=$C_{34}H_{68}O_2$: a waxy combustible mineral found in coal, probably derived from wax-bearing trees.

Geomys, (je'ō-mis). [Gk. *ge*, earth; *mys*, rat.] A rat-like animal belonging to Muridæ. *G. pinetis* = Hamster; *G. bursarius* = Canada pouched rat.

Geophila, (jē-of'i-la). [Gk. *ge*, earth: *philos*, loving.] A plant belonging to Cinchonaceæ.

Geophilus, (jē-of'i-lus). [Gk. *ge*, earth; *philos*, loving.] A pigeon-like bird belonging to Columbidæ.

Geordie safety lamp. A safety lamp for use in coal-pits invented by George Stephenson.

Georgian planet=Georgium sidus=Uranus, *q.v.*

Georychus, (jē-o-rī'kus). [Gk *ge*, earth; *orysso*, I dig.] Lemming, &c. Mole-rats, found in Equatorial Africa.

Geosaurus, (jē-ō-saw'rus). [Gk. *ge*, earth; *sauros*, lizard.] A crocodile-like reptile, known by fossil remains, also called Lacerta gigantea.

Geospiza, (jē-os'pi-za). A group of ground finches, peculiar to Galapagos Island.

Geostatic arches, (jē-o-stat'ik). [Gk. *ge*, earth; Statics, *q.v.*] Arches adapted to the support of a load of earth.

Geoteuthis, (jē-ō-tū'this). [Gk. *ge*, earth; *teuthis*, cuttle-fish.] A cuttle-fish, known by fossil remains found in Lias rocks.

Geotrupes, (jē-ō-trō'pez). [Gk. *ge*, earth; *trypao*, I bore.] Also called *Dorbeetle*, and *Flying-watchman*: an insect, the type of Geotrupidæ.

Geotrupidæ, (jē-ō-trō'pi-dē). [Geotrupes, *q.v.*] A family of beetles, belonging to Lamellicornes.

Gephyrea, (je-fī're-ă). [Greek *gephyra*, bridge.] A subdivision of Annulata, by Rolleston, which bridges over the interval between Echinodermata and Vermes.

Geraniaceæ, (je-ran-ī-ā'se-ē). [Geranium.] Crane's bills: resinous and fragrant herbs and shrubs with tumid stems and regular flowers, belonging to Geraniales.

Geraniales, (jē-ran-i-ā'lez). [Geranium, *q.v.*] Plants with monodichlamydeous symmetrical flowers, forming a division of Hypogynous Exogens.

Geranium, (je-rā'ni-um). [*Geranos*, a crane.] =Crane's bill: an herb belonging to Geraniaceæ. Named from long beak of fruit. *G. Robertianum* = Herb Robert.



Geranium.

Gerbil, (jer'bil). Labrador G. = Mus Labradorius.

Gerbillus, (jer-bil'lus)= Dipus: an animal belonging to Rodentia.

Gerda, (ger'da). No. 122 of the minor planets, discovered in 1872.

Gerfalcon, (jer-faw'kon) = Hierofalco=Falco candicans: an eagle-like bird.

Gerhardt's base=Platinammine, *q.v.*; named after M. Gerhardt.

Germ, (jerm). [L. *germen*, bud.] The bud which a new individual first develops, either in animals or plants.

German, (jer'man). 1.=High Dutch. 2. A prefix, usually implying relation to Germany. *G. black*. a vegetable black substance, probably charcoal, used in printing. *G. silver*: an alloy of copper, nickel, and zinc. *G. tinder*=Amadou, *q.v.* *G. yeast*, *v.* Yeast.

Germander, (jer-man'der) = Teucrium: an herb, belonging to Labiatæ.

Germanic floral region, characterised by deciduous trees and green vegetables.

Germen, (jer'men). [The Latin word.]=Ovary =Germ, *q.v.*

Germinal, (jer'min-al). [Germ.] *G. area*: the portion of an ovum in which development is taking place. *G. membrane*; three layers, the

outer of which becomes the chorion, and the inner the allantois.

Germination, (jer-min-ā'shun). [*Germinatio*, the Latin word]. The first stage of the development of an embryo into an animal or plant.

Gesneraceæ, (ges-ner-ā'se-ē). [Herr Gesnera.] =Gesner-worts: herbs and shrubs, with soft wood, rugose leaves and showy flowers, belonging to Bignonales.

Gesso, (jes'so) [The Italian word] A compound of white plaster of Paris and size, used as a ground for tempera painting.

Gestation, (jes-tā'shun). [*Gestatio*, the Latin word.] The carrying young in the womb during the age of development, previous to birth.

Geum, (gē'um). [The Latin word.]=Avens: an herb, belonging to Rosaceæ. *G. urbanum* =Herb Bennett=Wood avens. *G. rivale*= Water avens.

Geyserite, (gī'zer-īt). [Geysers, *q.v.*] A siliceous mineral, deposited by hot springs.


Geyser.

Geysers, (gī'zerz). 1. Two intermittent hot springs in Iceland, containing silica and other minerals in solution. 2. The name is also used as a general term for such springs.

Ghorka, (gor'ka)= Gamboge tree: a large tree of Ceylon.

Giant's causeway. A formation of basaltic rocks, in the North of Ireland, in which the columns of basalt are arranged as if, to form a causeway.

Gibbon, (gib'bon)=Hylobates: an active, gentle ape, with long arms and no tail, found in S. E. Asia, living in hills and trees, analogous to the spider monkey of the New World.


Gibbon.

Gibbous, (gib'bŭs). [L. *gibba*, a hump.] doubly convex. *G. moon*: greater than a half moon.

Gibbsite, (gib'sit). [Colonel Gibbs.]= AlH_3: a mineral, chiefly hydrated aluminum.

Gibraltar. *G. monkey*=Inuus ecaudatus. *G. stone*: a variety of calcite.

Giebel's classification of Mammalia,

Unguiculata—	Ungulata—
Quadrumana.	Solidungula.
Cheiroptera.	Multungula.
Feræ.	Bisulca.
Marsupialia.	Pinnata.
Glires.	
Edentata.	

Gig, (gig). [A.-S. *gangan*, to go.] A light clincher-built boat, about 25 feet long, intended for swift motion.

Gigantholite, (gi-gan'to-lit). A mineral, chiefly hydrated silicate of alumina and iron; a variety of Pinite.

Gilbertite, (gil'ber-tīt). [Mr. Gilbert.] A mineral, chiefly silicate of alumina, probably an impure variety of Kaolinite.

Gilding, (gil'ding). [Gold, *q.v.*] Covering with a thin layer of gold.

Gilead, Balm of: obtained from Icica carana, and Dracocœphalum.

Gill, (gil). Singular of gills, *q.v.*

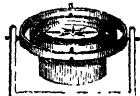
Gilliesiaceæ, (gil-li-si-ā'se-ē). [Gilliesia.]= Gilliesiads: small Chilian bulbous herbs, with narrow leaves, belonging to Liliales.

Gills, (gils) [*Geagl*, the A.-S name.]=Branchiæ: delicate skin processes, richly supplied with blood-vessels, by means of which aquatic animals breathe

Gillyflowers, (jil'li). [*Giroflée*, the French name.] 1.=Cheiranthus cheiri. 2. Matthiola incana=stock=wall flower.

Gilthead (gilt'hed).=Chrysophrys aurata: also =Crenilabrus melops. a fish, named from its head being partly yellow.

Gimbals, (gim'bals). [L. *gemellus*, double.] Two supports for a ship's compass, enabling it to remain horizontal.


Gimbal

Gin, (jin). [1, F. *geni èvre*, juniper; 2, 3, abbr. of engine.] 1. A spirit obtained from corn, and flavoured with the berries of the juniper plant. 2. A machine used to cleanse cotton previous to its being spun. 3. Sometimes used for machine.

Gingelly seed=Seed of Sesamum orientale. *Oil of G.*: used to adulterate almond oil.

Ginger, (jin'jer) [Corruption of Zingiber.] 1.=Zingiber officinale; a tree, belonging to Zingiberaceæ. 2. The rhizome of Zingiber officinale, Alpinia racemosa, &c., used as a spice. *G. beer*: a fermented drink made from ginger root, with the addition of sugar, tartaric acid, &c.

Gingerbread tree=Hyphæne thebaica: a tree belonging to Palmaceæ.

Ginger-worts, (jin'jer-wurts). [Ginger and Worts, *q v.*]=Zingiberaceæ, *q.v.*

Ginseng, (jin-seng'). [The Chinese name.]= Panax quinquefolium: an herb belonging to Araliaceæ, the root of which is used medicinally.

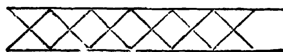
Gipsies, (jip'siz). [Plural of Gipsy, *q.v.*] A wandering Indo-European people, probably of Indian origin; also called Bohemians, Gitanos, and Zingari.

Gipsy, (jip'si). [Probably a corruption of Egyptian] 1. Singular of Gipsies, *q.v.* 2.= Opisthocomus: a gallinaceous bird of Brazil. *G. moth*=Liparis dispar. *G. wort*=Lycopus.

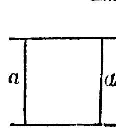
Giraffe, (ji-raf'). [*Girafa*, the Spanish name.] =Giraffa=Camelopardalis: an herbivorous quadruped, intermediate between Cervus and Antelope: remarkable for its long neck and legs.

Girasol, (zhi'ra-sol) [The Italian name]=Sun-opal: a transparent red variety of opal, also called fire-opal

Girder, (ger'der) [A.-S. *gerd*, rod] A large beam crossing a wide opening, such as a road *Box G*: a square tube. *Lattice G.*: with iron lattice-work. *Plate G.*: having a plate at top or bottom, or both.



Lattice Girder.



Box Girder.

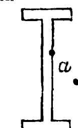


Plate Girder

Gismondite, (gis'mon-dīt). A rare mineral, chiefly hydrated silicate of aluminum, calcium, &c.

Gizzard, (giz'zard) [*Gesier*, the French word] In birds: a modification of the stomach, serving to grind grain, and corresponding to the pylorus.

Glacial, (glā'si-al). [*Glacialis*, the Latin word.] Icy. connected with glaciers *G.drift*=Boulder formation=Diluvium. *G. period:* common to and connecting Tertiary and Post-Tertiary, probably divisible into two periods, separated by a long period of submergence, and partly anterior to drift period *G. action:* existence of, proved by erratic blocks, Arctic character of shells, and similarity of fauna and flora on far apart mountains *G. acids:* which occur in a crystalline form.

Glacier, (gla'si-er). [The French word.]=Snow converted into ice, usually porous and opaque: an ice river, abundant in Switzerland, Norway, and near Cape Horn. The motion of a glacier is continuous, but varies with the temperature

Gladiolus, (gla-di'o-lus). [L. *gladiolus*, little sword]=Corn flag: a plant belonging to Iridaceæ, named from its sword-shaped leaves.

Gladius, (glā'di-us). [L. *gladius*, sword] The internal shell of cuttle fishes; also called Pen.

Glairin, (glair'in). [*Glaire*, the French word.] =Glaire=White of egg. *v.* Albumin.

Glaisher's factors [Prof Glaisher.] A table of constants used in finding the dew point.

Glance, (glans). [*Glanz*, the German word] A general term for lustrous minerals. *G. copper* = Chalcocite. *G. coal* = Anthracite. *Lead G.*=Galena.

Glands, (glandz). [L. *glans*, acorn.] Secreting viscera: those which absorb from the blood certain substances. *Monotrematic G.* =Abdominal G. of Ornithorhynchus: have no nipples; not conglomerate. *Mammary G.*: simple cæca in Cetaceæ and Monotremata; conglomerate in higher Mammalia. *G. of Lieberkühn:* in the walls of the intestines.

Glareola, (glā-re-ō'la)=Pratincole: a wading bird, known in the Old World only, belongs to Grallatores.

Glass, (glas). [*Glas*, the A.-S. word.] A compound of various silicates, which is very transparent, very brittle, and fusible at a high temperature, and can be converted into enamel or porcelain. *Bohemian G:* silicate of potassium and calcium. *Bottle G*: a coarse variety of glass *Crown G.*=Silicate of potassium and calcium. *Flint G.*=Silicate of lead and potassium. *Stained G.*: coloured in the making, chiefly by metallic oxides. *Plate G*=Cast G.=Silicate of sodium, calcium, iron, &c. *Volcanic G* = Obsidian. *Water G*=Soluble G.=Hydrated silicate of potassium or sodium. *G egg*=Campanularia integra. a parasite upon parasitic Sertularia. *G eel*: belonging to Leptocephalidæ. *G. rope-sponge* = Hyalonema *G. serpent* = Anguis ventralis *G. shell*=Carinaria. belongs to Gasteropoda. *G. shrimp* = Erichthus. a marine crustacean animal *G. wort*=Salicornia. an herb belonging to Chenopodiaceæ.

Glasseri fissura=Glasserian fissure: a narrow slit between two bony surfaces in the ear, through which the tympanic artery passes.

Glauberite, (glaw'ber-īt). [Glauber's, *q v*] A mineral, chiefly sulphate of lime and soda.

Glauber's salt, (glaw'berz) [Herr Glauber.] =Sulphate of soda: used medicinally, also called Mirabilite.

Glaucæ, (glaw'sē). A group of small willows, with soft silky leaves

Glaucium, (glaw'si-um). [Gk. *glaukos*, blue.] Horned poppy a plant belonging to Papaveraceæ

Glaucolite, (glaw'ko-līt). [Gk. *glaukos*, blue; *lithos*, stone.]=Wernerite: a variety of albite; a mineral, chiefly silicate of alumina and lime

Glaucoma, (glaw'ko-ma). [Gk *glaukos*, blue.] A disease of the eye, in which the pupil is changed in colour from black to green

Glauconite, (glaw ko-nīt). [Gk. *glaukos*, blue] A silicate of aluminum, iron, &c., found in Greensand.

Glaucophane, (glaw'kō-fān). [Gk. *glaukos*, blue, *phaino*, I show.] A variety of garnet. A mineral, chiefly silicate of aluminum, iron, potassium, &c.

Glaucopis, (glau-kō'pis) [Gk *glaukos*, blue; *ops*, eye.] Wattle-bird. a sparrow-like bird.

Glaucus, (glaw'kus) [Gk. *glaukos*, blue.] 1. A molluscous animal, belonging to Gasteropoda. 2 A small lizard-like animal, with body and tail, four limbs, and many feelers, but no mouth or eyes , about 1 inch long.

Glaux, (glawks). [Gk *glaukos*, blue] 1. Sea milk-wort. 2. An owl. *G. Javonica*=Glass owl.

Glazing, (glā'zing). [Glass, *q v.*] 1. Fixing plates of glass in window frames, &c. 2. To cover with a vitreous coat.

Gleditschia, (gled-it'si-a). [Herr Gleditsch, a German botanist.] A plant, belonging to Leguminaceæ *G.triacanthos*=Honey locust. *G. monosperma*=Water locust

Gleicheniaceæ, (gli-ken-i-ā'se ē). *v.* Filicales:

a primary sub-division of Filicales or Ferns; chiefly tropical.

Glengariff grit=Dingle: a schistose and quartzose rock, corresponding with Upper Silurian

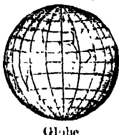
Glenoid surface, (glen'oid) [Gk. *glene*, socket; *eidos*, form.] 1. Of the temporal bone, articulating with the parietal. 2. Generally for any similar surface.

Gliadin, (gli'a-din). [Gk. *glia*, glue.]=Glutin: one of the constituents of glue.

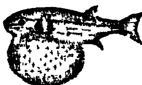
Glires, (gli'rēz). [L. *glis*, dormouse]=Rodentia: used by Linnæus for the group of animals including the porcupine, beaver, rat, squirrel, &c.

Glis, (glis). [L. *glis*, dormouse.] A rat-like animal, belonging to Rodentia.

Globe, (glōb). [*Globus*, the Latin word.] The earth, named from its form. According to geological and physical theories, the earth was formerly a molten globe; and, according to astronomical and chemical theories, it was formerly an incandescent centre of light and heat *G. fishes*=Gymnodontidæ: have an air sac which, when inflated, gives the fish a spherical form. *G. slaters*=Sphæroma: sessile-eyed crustaceans. *G. flower* = Trollius: named from the globe-shaped flowers.



Globe



Globe fish

Globigerinæ, (glō-bij-er-ī'nē). [L. *globus*, globe; *gero*, I bear] Minute foraminifera, found in great abundance at the bottom of the Atlantic. Found fossil in Tertiary rocks and in Chalk.

Globiocephalus, (glō-bi-ō-sef'a-lus) [L. *globus*, globe; Gk. *kephale*, head] A variety of the dolphin; an animal belonging to Cetacea. *G. svineval*=Pilot whale.

Globular, (glob'u-lar). [Globe, *q.v.*] Related to a globe in form. *G. minerals*: which occur in more or less complete spheres. *G. projection*. *v.* Map.

Globulariaceæ, (glob-ū-la-ri-ā'se-ē). [Globularia, the typical genus]=Selagids: herbs with alternate leaves, sessile flowers, and two-celled fruit with pendulous seeds.

Globulin, (glob'u-lin). [Globular, *q v.*]=Crystallin: in blood globules; the albuminous substance of which they are mainly composed.

Globulodus, (glo-būl'o-dus). [L *globulosus*, globular; Gk. *odous*, tooth.] A ganoid fish, known by fossil teeth, found in Permian rocks.

Glomerulus, (glom-er'u-lus). [L. *glomero*, I make into a ball.] Globular accumulation. *e.g.*, bundles of capillary vessels in which the renal arteries terminate within the Malphighian capsules of the kidneys.

Glonoine, (glo-noin')=Nitro-glycerine, *q v.*

Glossohyal bone, (glos-sō-hi'al). [Gk. *glossa*, tongue; Hyal, *q.v.*]=Lingual bone: a slight bone supporting the tongue in some fishes.

Glossopetra, (glos-sō-pet'ra). [Gk. *glossa*, tongue; *petron*, rock] A general term used for fossil teeth.

Glossophaga, (glos-of'a-ga). [Gk *glossa*, tongue, *phago*, I eat.] Leaf-bat, &c: an animal, belonging to Cheiroptera.

Glossopharyngeal nerves, (glos-sō fa-rin'je-al) [Gk. *glossa*, tongue, Pharyngeal, *q v.*] The ninth pair of nerves, serving the tongue and the muscles of the pharynx.

Glottalite, (glot'a-līt). A mineral, chiefly hydrated silicate of alumina and lime.

Glottis, (glot'tis). [Gk. *glotta*, tongue] The aperture at the back of the mouth, forming the entrance to the trachea or windpipe.

Glow-worm=Lampyris noctiluca: an insect, belonging to Coleoptera, which emits a phosphorescent light.

Glucic acid, (glū'sik). [Glucose, *q v.*] $C_{12}H_{18}O_9$=Glucinic acid: obtained from sugar. Apoglucic acid=Oxidised glucic acid=Assamar.

Glucina, (glū-sī'na). [Gk. *glykys*, sweet]= GO = Oxide of glucinum: named from its sweet taste

Glucinum, (glū-sī'num) [Glucina, *q.v.*]=G": Beryllium: one of the earth-metals, a white malleable metal, obtained from the emerald.

Gluco, (glū'ko). [Gk. *glukus*, sweet.] A prefix implying the presence of glucose, or derivation from it.

Glucocitric acid, (glū-kō-sit'rik). [Gluco and Citric, *q.v.*] A compound of glucose and citric acid.

Glucosan, (glū'kō-sān). [Glucose, *q.v.*] = $C_6H_{10}O_5$: the anhydride of dextro-glucose: a colourless amorphous substance, into which grape sugar is converted by the loss of some of its water

Glucose, (glū'kōs). [Gk. *glykys*, sweet.]= $C_6H_{12}O_6$: a saccharine substance formed from the blood by the action of the liver; also called grape sugar, liver sugar, &c.

Glucosides, (glū'kō-sīdz). [Glucose, *q.v*] Arbutin, esculin, salicin, quercitrin, &c., crystalline substances from which sugar can be obtained

Glucotartaric acid, (glū-kō-tar-tar'ik). [Gluco and Tartaric, *q.v.*] A compound of glucose and tartaric acid.

Glue, (glū). [Gluten, *q.v.*] A thick gelatinous substance prepared from skins and other animal matter: an inferior quality of gelatin.

Glue plant = Fucus tenax = Plocaria tenax: used as glue or varnish.

Glumaceæ, (glū-mā se-ē). [Glume, *q.v.*] Grasses, sedges, &c.: plants having the flowers in glumes.

Glumaceous, (glū-mā'se-us.) [Glume, *q.v.*] Related to Glumaceæ.

Glumales, (glū-mā'lēz). [Glume, *q.v.*] Evergreen herbs, with cylindrical jointed stems, narrow leaves, and scales for floral envelopes, forming a division of Endogens, and including Cyperaceæ, Gramineæ, &c.



Glume.

Glume, (glūm). [*Gluma*, the Latin word] The floral envelope of grasses, &c., formed of two bracts.

Glutamic acid, (glū-tă'mik). [Glucose, *q.v.*] $C_5H_9NO_4$: an acid substance obtained from gluten

Gluten, (glū'ten). [The Latin word.] A gray elastic compound of glutin, fibrin, casein, &c: the chief ingredient in the seeds of wheat, rye, &c.

Glutin, (glū'tin). [Gluten, *q.v.*] An albuminous substance obtained from gluten.

Glutton, (glut'ton). [*Glutto*, the Latin name.] = Ursus gulo = Wolverene: named from its voracious appetite.


Glutton

Glyceramine, (glis'-er-a-min). [Glycerine and amine, *q.v.*] $C_3H_9NO_2$: a base obtained from glycerin.

Glyceria, (gli-sē'ri-a). [Gk *glykeros*, sweet.] = Manna grass; a plant belonging to Gramineae

Glyceric, (glis'er-ik). [Glycerin, *q.v.*] Related to glycerin. *G acid*=$C_3H_6O_4$. *G. acids* =$C_nH_{2n}O_4$. *G ether*=$C_6H_{10}O_3$

Glycerides, (glis'er-īdz). [Glycerin, *q.v.*]= Compound ethers of glycerin, artificial compounds resembling fats.

Glycerin, (glis'er-in). [Gk *glykys*, sweet]= $C_3H_8O_3$=Sweet principle of oils: separated from most fats and oils during saponification=an alcohol, used to preserve animal substances. *v.* Alcohols. Does not freeze nor evaporate at any usual temperatures *v.* Nitro-glycerin.

Glyceryl, (glis'er-il). [Glycerin, *q.v.*] The radicle of glycerin.

Glycocholic acid, (glī-kō-kol'ik). [Gk. *glykys*, sweet; *chole*, bile.]=$2C_{26}H_{43}NO_6$. a white crystalline acid substance obtained from the bile of oxen.

Glycocine, (glī'kō-sīn). [Gk *glykys*, sweet.] =$C_2H_5NO_2$: a sweet crystalline substance obtained from glycerin.

Glycocoll, (glī'ko-kol). [Gk. *glykys*, sweet; *kolla*, glue.]=Glycocine, *q.v.*

Glycogen, (glī'ko-jen). [Glucose, *q.v.*; Gk. *gennao*, I produce.]=$C_6H_{10}O_5$: an amyloid substance found in the liver and the placenta, which is converted into sugar by the action of the liver.

Glycol, (glī'kol) [*Gly*cerin and Alcoh*ol*]= =$C_2H_6O_2$=Ethylene alcohol: a liquid subsubstance intermediate between glycerin and alcohol, the vapour of which is inflammable.

Glycolic acid, (gli-kol'ik). [Glycol, *q.v.*]= $C_2H_4O_3$: a syrupy liquid, the type of the glycolic series of acids.

Glycolic series=$C_nH_{2n}O_3$: a series of acids intermediate between acetic and oxalic series, including glycolic and lactic acids.

Glycolide, (glī'ko-līd). [Glycol, *q.v.*]=Glycolic anhydride=$C_2H_2O_2$.

Glycollamide, (glī-kol'a-mīd). [Glycol and Amide, *q.v.*]=$C_2H_5NO_2$: the amide of glycol.

Glycols, (glī'kolz). [Glycol, *q.v.*] = Diatomic alcohols: a series of hydrocarbons, of artificial composition, intermediate between alcohols and glycerins, which, when oxidized, become acids.

Glycolyl, (glī'ko-lil) [Glycolic, *q.v.*]=C_2H_2O: the radicle of the glycolic series

Glycose, (glī'kōs). [Gk. *glykys*, sweet.] = Glucose, *q.v.*

Glycyl, (glī'sil). [Glycerin, *q.v.*]=C_3H_5: an hypothetical radicle of glycerin.

Glycyrhiza, (gli-sir'i-za). [Gk. *glykys*, sweet; *rhiza*, root.]=Liquorice plant: a plant belonging to Fabaceæ.

Glyoxal, (glī-oks'al). [Glycol and Oxalis, *q.v.*] =$C_2H_2O_2$=An aldehyde of glycol, intermediate in composition between glyoxilic and glyoxalic acids

Glyoxalurea, (glī-oks-ă-lū're-a). = Allanturic acid, *q.v.*

Glyoxiline, (glī-oks'i-līn). [Glyoxal, *q.v.*] A mixture of gun-cotton and nitre.

Glyoxylic acid, (glī-oks-il'ik). [Glycol and Oxalic, *q.v.*]=$C_2H_4O_4$: an acid obtained from glycerin by action of nitric acid, intermediate between the glycolic and oxalic series of acids

Glyphoglossus, (glī-fō-glos'sus). [Gk. *glyphe*, carving, *glossa*, tongue]—Indian toad the fattest of all toads.

Glyphography, (glī-fog'ra-fi) [Gk *glyphe*, carving, *grapho*, I write.] A process of etching by galvanism, in which the drawing is in relief.

Glyptic, (glip'tik) [*Glyptos*, the Greek word.] =Carved: engraved.

Glyptodon, (glip'tō-don). [Gk. *glyptos*, carved; *odous*, tooth.] A large edentate animal, of which fossil remains, chiefly fluted teeth, have been found in Pleistocene rocks.


Glyptodon

Glyptolepis, (glip-tol'e-pis). [Gk. *glyptos*, carved; *lepis*, plate.] A fossil Ganoid fish found in Devonian rocks

Gmelinite, (mel'i-nit). [Herr Gmelin.]=Chabazite, *q.v.*: a mineral of the zeolite group, chiefly hydrated silicate of aluminium, calcium, and sodium; also called Hydrolite.

Gnaphalium, (na-fā'li-um). [Gk. *graphalion*, woolly.] = Cudweed: Cotton weed, &c, a plant belonging to Compositæ. *G orientale* =Everlasting Love.

Gnat, (nat). [The A.-S. name.]=Culex: an insect belonging to Diptera.

Gnats, (nats)=Culicidæ: insects belonging to Diptera, including the gnat, mosquito, &c.

Gnathites, (na-thī'tēz) [Gk *gnathos*, jaw] Appendages to Decapoda, modified for mastication.

Gnathodon, (nath'ō-don). [Gk. *gnathos*, jaw; *odous*, tooth.] A molluscous animal.

Gnathodontes, (nath-ō-don'tēz). [Gk. *gnathos*, jaw; *odous*, tooth] Name suggested by De Blainville for a primary division of fishes, including the bony fishes.

Gnathostoma, (nath-os'to-ma). [Gk. *gnathos*, jaw; *stoma*, mouth.] Small worms, belonging to Entozoa, found in the stomach of the tiger, leopard, &c.

Gneiss, (nīs). A rock resembling granite, but having a more stratified or foliated appearance: composed of quartz, felspar, and mica; one of the metamorphic rocks, very durable.

Gneissoid, (nī'soid) [Gneiss, *q v.*, Gk. *eidos*, form] Resembling gneiss.

Gnetaceæ, (ne-tā'se-ē). [Gnetum, *q.v.*]=Joint-firs; small trees, with jointed stems, belonging to Gymnogens, but approximating to Exogens.

Gnetum, (nē'tum) [The Latin name.] A plant, the type of Gnetaceæ, found in tropical India and America.

Gnomon, (nō'mon) 1. A figure resembling a carpenter's square, formed by taking away a portion of a rectangle. 2. The index of a sun-dial.

Gnomonic, (nō-mon'ik). [Gnomon, *q v*] Relating to a gnomon. *G. projection*: in map drawing, in which the eye is supposed to be at the centre of the earth.

Gnu, (nū). [The Hottentot name]=Antilope gnu: an animal resembling the antelope, the buffalo, and the horse.



Gnu

Goat, (gōt). [*Gat*, the A.-S. name] =Capra: an animal belonging to Ruminantia. *G.'s beard* = Tragopogon pratensis. *G moth*= Cossus ligniperda. *G. pepper*=Capsicum, *q.v.* *G. sucker* = Caprimulgus, *q.v.*, a bird also called Night-jar. *G.'s thorn* = Astragalus verus *G. weed* = Ægopodium, *q.v.*



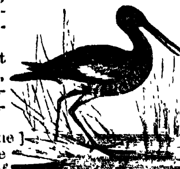
Goat-sucker.

Gobioidei, (gō-bi-oi'de-ī). [Gobius, *q v* ; Gk. *eidos*, form] = Gobidæ. Goby, Blenny, &c., a family of fishes belonging to Acanthopteri.

Gobius, (gō'bi-us). [The Latin name.]=Goby: a nest-building fish.

Godin. In moon, a crater 22 miles in diameter.

God-wit, (god'wit) [A.-S *god*, good, *wiht*, creature.] = Limosa, a wading bird, belonging to Longirostres.



Godwit.

Gœthe's theory: that all organs of plants, petals, sepals, stamens, &c , are metamorphosed leaves

Gœtite, (gė'tit). [Gœthe] =Oxide of iron. one of the iron group of minerals, crystallising in rhombs: much resembling limonite.

Goitre, (goi'tr). [The French name.]=Bronchocele: the enlargement, by disease, of the thyroid gland, also called "Derbyshire neck."

Gold, (gold)=Au'''=Aurum: one of the noble metals, a soft, yellow, lustrous, malleable metal, valuable from its beauty, scarcity, and freedom from the action of oxygen: found most commonly in Palæozoic rocks. *Native G.*=found in grains and nuggets, sometimes also contains silver, copper, &c. *G. carp*= *G. fish*=Cyprinus auratus. *G. finch*=Fringilla carduelis, a bird. *G finny* = Crenilabrus. *G. flux*=Avanturine. *G. leaf electroscope*=Bennett's E., *q.v.* *G. of pleasure* =Camelina, *q.v.* *G. thread*=Coptis trifolia, a plant belonging to Ranunculaceæ.

Gold-beater's skin. The thin skin of the intestines of oxen, prepared for use in gold-beating.

Gold-beating. The hammering of gold into extremely thin sheets.

Golden, (gōl'den) [Gold, *q.v*] *G. fly*=Chrysis: an insect, belonging to Hymenoptera *G. maid*=Crenilabrus melops: a fish, belonging to Labridæ. *G. number*: marks the place of the year in the cycle of 19 years, in which the civil and astronomical years coincide. *G. rod* =Solidago an herb, belonging to Compositæ. *G robin*=Baltimore oriole. *G. teeth*: teeth of herbivorous animals are sometimes coated with a yellow precipitate. *G. trumpeter*, Agami, a crane-like bird.

Goldie-locks=Linosyris : an herb, belonging to Compositæ.

Gomeisa=β Canis Minoris : the second star in the constellation Canis Minor.

Gomer, (gō'mer). The conical chamber of a gun.

Gompholite,(gom'fō-līt). [Gk. *gomphos*, wedge; *lithos*, stone] A miocene rock, named from the wedge-shaped pebbles found in it.

Gomphosis,(gom-fō'sis). [Gk. *gomphos*, wedge] The union of two bodies by the insertion of one in the other.

Gomuti palm, (go-mō'ti). Borassus saccharifer us=Borassus gomuti=Arenga saccharifera a palm tree, from which sago and sugar are obtained.

Gonds An Asiatic people.

Gong metal. An alloy of copper and tin, used in making gongs.

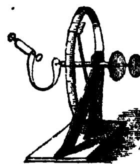
Goniaster, (gō-ni-as'ter). [Gk. *gonia*, angle : *aster*, star.]=Cushion star : connects Asteriadæ with Echinidæ. Many species are found fossil in Tertiary rocks

Goniasteria,(gō-ni-as-tē'ri-a). [Goniaster, *q v*] Goniaster, &c.: a group of star fishes, belonging to Asteriadæ.

Goniatites, (gō-ni-a-tī'tēz). [Gk. *gonia*, angle] Fossil remains of Ammonites, many species of which are found in Devonian and Carboniferous Limestone.

Gonidia,(go-nid'i-a). Algæ imprisoned by fungi, so as to form lichens, *q.v.*

Goniometer, (gō-ni-om'e-ter). [Gk. *gonia*, angle; Meter, *q.v.*] An instrument for measuring the angles of crystals, or angles generally,



Goniometer.

Goniometric, (gō-ni-ō-met'ric). [Goniometer, *q v*] Connected with the measurement of angles.

Goniometry, (gō-ni-om'e-tri). [Gk. *gonia*, angle: Meter, *q v.*] The art of measuring angles.

Goniopholis, (go-ni-of'ō-lis). [Gk. *gonia*, angle; *pholis*, scale] A reptile, belonging to Crocodilia, known by fossil remains in Wealden and Purbeck rocks.

Gonoblastidium. Reproductive matter found in gonophores.

Gonophore, (gon'o-fōr). [Gk. *gonos*, seed; *phero*, I bear.]=Androphore: generative elements; ex, such as are produced in walls of the manubrium of Medusæ.

Gonopteryx, (gon-op'ter-iks). [Gk. *gonia*, angle; *pteryx*, wing.] An insect belonging to Lepidoptera. *G. libatrix*=Herald moth. *G. rhamni*=Brimstone butterfly.

Gonosome, (gon'o-sōm). [Gk. *gonos*, seed; *soma*, body.] Collective name for generative organs

Goodeniaceæ, (good-en-i-ā'se-ē) [Goodenia, the typical genus]=Goodeniads=Goodenoviеæ. herbs, chiefly Australian, with scattered leaves and monopetalous flowers, belonging to Campanales.

Goosander, (goos-an'der). [Goose, *q.v.*]=Mergus: an aquatic bird, belonging to Natatores.

Goose, (goos) [*Gos*, the A.-S. name]=Anser: an aquatic bird, belonging to Natatores. *Bean G.*=Anser segetum. *Upland G.*=Chloephaga magellanica. *G. foot*=Chenopodium. *G grass*=Galium aparine

Gooseberry (gooz'ber-ri) [Cor. of gooseberry.]=Ribes grossularia: a plant, belonging to Saxifragaceæ.

Goose-dung ore=Ganomatite, *q.v.*

Gordiaceæ. (gor-di-ā'se-ē) [Gordius, *q v.*] Thread-like animals, belonging to Scolecida, and forming a division of Cœlemintha.

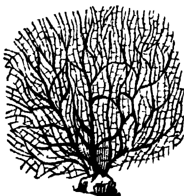
Gordius, (gor'di-us), A nematoid worm, the body of which usually resembles knots.

Gorge, (gorj). [The French word] 1. A narrow entrance, or narrow valley with lofty sides. 2. The entrance to a bastion, &c, where the sides approach near each other. 3. Any narrow entrance.

Gorgol=Gargoyle, *q.v.*

Gorgonia, (gor-gō'ni-a). [The Latin name.] A coral polype, the type of Gorgoniacæ *G verucosa:* Warted Sea-Fan *G. anceps*=Sea-willow.

Gorgoniæ, (gor-gō'ni-ē). [Gorgonia, *q v.*] A family of coral-forming animals, belonging to Actinozoa.


Gorgoniæ.

Gorgonidæ, (gor-gon'i-dē). [Gorgonia, *q.v.*; Gk. *eidos*, form.]=Sea shrubs: coral polypes, including red coral, a division of Actinozoa.

Gorilla, (gor-il'la). [The African name]=Troglodytes gorilla: an anthropoid ape of Africa, also called Pongo: large, bulky, arboreal, herbivorous, and polygamous, first discovered in 1843.


Gorilla

Gorse, (gors). [*Gears*, the A.-S. name.]=Ulex: a thorny shrub with yellow flower, belonging to Leguminaceæ.

Goshawk,(gos'hawk). [Corruption of goose-hawk.]=Astur palumbarius a hawk-like bird, belonging to Falconidæ.

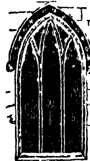

Goshawk

Goslarite, (goz la-rīt). [Goslar mine.]=White vitriol. a mineral, chiefly hydrated sulphate of zinc

Gossypium, (gos-sip'i-um) [Arab *goz* or *gothn*, a soft substance.]=Cotton plant: a plant, belonging to Malvaceæ, which has fibres, from ½ inch to 1½ inches long, on the seeds. These fibres are raw cotton.

Gothic, (goth'ik) =Teutonic: a race of people inhabiting N and N W. Europe: German, English, Dutch, Danish, Swedish, &c.

Gothic architecture. A form of architecture, distinguished by pointed arches, dating from the 13th century; much used in Central and Northern Europe for ecclesiastical buildings

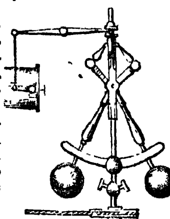

Gothic-window.

Gotnite, (ge'tit). [Goethe] A mineral, chiefly hydrated oxide of iron

Gourd, (gōrd). [*Gourde*, the French name.]=Cucurbita: a plant, with large edible fruit, belonging to Cucurbitaceæ.

Gout-weed=Goat-weed, *q v.*

Governor, (guv'er-ner.) A contrivance for regulating the supply of steam or water to machinery so as to preserve uniform velocity. *Watt's G.:* a heavy conical pendulum of varying shape, as in drawing. *Siemen's G.:* a conical pendulum and train of wheels, adapted to ensure a great degree of uniformity.


Governor

Gowdie, (gow'di).=Callionymus lyra: a fish, belonging to Gobioidæ.

Graafian vesicles, (grā'fi-an). [Heri de Graaf.]

Small vesicles, found in the human ovary, containing the ova.

Gracula, (grak'ū-la). [The Latin name.]= Grakle-bird: a crow-like bird

Graculinæ, (gra-kū'li-nē). [Gracula, *q v*] A division of Corvidæ: a family of birds, of which Gracula is the type.

Gradient, (grā'di-ent). [L. *gradus*, step] An inclined plane, especially of a road. *Ruling G.*: the gradient adapted to any given road, or kind of road *Telford's R G.*= $\frac{1}{30}$, *i.e.*, rising 1 ft. in 30 ft.

Graduation, (grad-ū-ā'shun) [L. *gradus*, step.] Division into degrees

Grahamite, (grā'ham-it). [Mr. Graham] A mineral resembling coal, a variety of asphalt, found in Virginia.

Graining, (grā'ning).=Leuciscus: a fish, belonging to Cyprinidæ

Grains of paradise=The seeds of Amomum grana-paradisi

Grakles, (grā'klz) =Quiscalinæ, *q.v*: a family of birds resembling the starling; also called *Boat-tails*, from shape of the tails.

Grallæ, (gral'lē). [L. *grallæ*, stilts] = Grallatores: an order of birds, by Milne-Edwards.

Grallator, (gral-lā'tor). [L. *grallator*, one on stilts] A group of birds, remarkable for length of stride and slenderness of toes, known only by fossil footmarks. *v.* Pachydactylous Lithichnozoa.

Grallatores, (gral-lā-tō'rēz) [Plural of grallator] Crane, plover, coot, snipe, &c Wading birds: having long legs, building their nests on the ground, on banks and shores

Gramina, (gram'i na). [The Latin name.]= Grasses =Graminaceæ, *q.v.*

Graminaceæ, (gram-in-ā'se-ē). [Gramina, *q.v.*]=Grasses. evergreen plants, with cylindrical jointed stems, sheathing leaves, and green flowers in spikes, belonging to Glumales.

Gramme, (gram). [The French word.]= The weight, in vacuo, of one cubic centimetre of water at its great density, 4° C.=15½ grains nearly; the unit of weight in the Metric system.

Grammepus, (gram-ē'pus) [Gk. *gramma*, line; *pous*, foot.] An invertebrate animal, known only by fossil tracks, belonging probably to Crustacean Lithichnozoa

Grampus, (gram'pus). [Corruption of French, *grand poisson*, large fish.] An animal, belonging to Cetaceæ, resembling the dolphin.


Grampus.

Granite, (gran'it). [*Granit*, the French word.] A rock of igneous origin, formed under great pressure: melted and slowly crystallised; differs from volcanic rock in being more crystalline and having no breccias; composed of quartz, felspar, and mica, one of the Plutonic rocks. *Foliated G.*=Gneiss. *Graphic G.*=Prismatic veins, with but little mica. *Protogine G.*=with the mica replaced by talc *Syenitic G* =with the mica partially replaced by hornblende, approximates to Syenite.

Granules, (gran'ūlz) [L. *granulus*, little grain.] Small grains *G. of Langley:* minute bodies present over the whole solar surface; the immediate sources of solar light and heat *G. of Huggins*= Groups of Langley's granules.

Granulite, (gran'ū-lit) [Granite, *q v.*] A mineral, chiefly felspar, quartz, and garnet: gneiss in which mica is replaced by garnet.

Grape, (grāp). [F. *grappe*, a branch of grapes] The fruit of the vine. *G. hyacinth*=Muscari: a plant belonging to Liliaceæ *G. shot*: a number of shot arranged so as to be fired as one, but dispersed after discharge. *G. sugar*: $C_6H_{12}O_6+H_2O$=Starch sugar: a variety of sugar obtained from fruit, especially grapes, and from starch, also called *glucose* and *dextrose* *v.* Sugar. *G. vine*=Vitis: a plant belonging to Vitaceæ.

Graphic, (graf ik) [*Graphicus*, the Latin word] Descriptive. *G. formula* in chemistry, showing the combining equivalent of the elements in a substance by means of symbols, the supposed connection of the atoms being represented by lines uniting the symbols. *G. acid*=$C_{11}H_4O_5$: obtained by oxidation of graphite. *G representation:* by means of lines or diagrams. *G. tellurium* =Sylvanite.

Graphidaceæ, (graf-i-dā'se-ē). [Graphis, the typical genus.] Letter-lichens: a division of lichens, named from the fructifying portions resembling written characters

Graphite, (graf'it) [Gk. *grapho*, I write] =Plumbago=Black-lead: a native form of carbon. *G. battery:* a variety of galvanic battery, consisting of zinc and carbon in sulphuric acid

Graphon, (graf'on). [Graphite, *q.v.*]=Gr= an allotropic form of graphite.

Graphotype, (graf'ō-tip). [Gk. *grapho*, I write; *typos*, type] A method of engraving by drawing in ink upon a chalk surface, and removing the chalk between the lines of the drawing, so that it stands out in relief, and can be copied in stereotype.

Grapsoidæ, (grap-soi'dē). [Grapsus; Gk. *eidos*, form.]=Grapsidæ: crab-like animals, belonging to Brachyura, can open the branchial cavity in front or behind, to breathe water or air, so forming a link between aquatic and terrestial respiration.

Graptolites, (grap-tō-li'tēz). [Gk. *graptos*, written; *lithos*, stone.]=Graptolithus: exclusive and characteristic Silurian fossils: animals belonging to Hydrozoa. *Double G.* =Diplograpsus and Didymograpsus. *Twin G.*=Didymograpsus.

Grass, (gras). [*Gras*, the A.-S. name.] An herb, usually slender, belonging to Graminaceæ. *Beard G.*=Polypogon. *Cat's tail G.* = Phleum. *Fox tail G* = Alopecurus. *Holy G* =Hierochloe. *Manna G.*=Glyceria. *Marrem G.*=Psammia. *Meadow G.*=Poa. *Quaking G.*=Briza. *Rye G.*=Lolium. *Vernal G* =Anthoxanthun. *G. cloth:* a textile

fabric made in China from the fibre of Musa textilis, or of Corchorus capsularis. *G. hopper* = Gryllus: an insect, belonging to Orthoptera, with long hind legs. *G. lizard*= Tachysaurus Japonicus: a slender, brilliantly green reptile, common in Borneo. *G. moth*= Crambus: a small moth living in grass. *G. tree*=Xanthorrhœa. *G. wrack* = Zostera: a plant belonging to Naiadaceæ.


Grasshopper

Grasses, (gras'es). [Grass, *q.v.*]=Graminaceæ, *q v.*

Grasshoppers=Gryllidæ, *q.v.*

Gratings. *Diffraction G.* *v.* Diffraction.

Graucalus, (graw'ka-lus)=Papuan crow: a sparrow-like bird.

Grauwacke, (grau-wak'a). [The German word] 1. A rock in which fragments of quartz are mixed with clay-slate 2. Used to include Silurian and Cambrian rocks: often used generally as=Transition rocks.

Gravel, (grav'el), [*Gravelle*, the French word.] Water-worn fragments of rock: vary in size from that of a pea to that of an egg.

Gravesande, (grā-va-san'da). [Herr Gravesande of Holland.] *G 's apparatus*: a combination of cords and weights intended to illustrate the parallelogram of forces *G 's ring:* a ring and a ball which when cold passes through, but when heated will not; intended to show the expansion caused by heat.

Grave-wax, (grāv'waks). [First found in graves]=Adipocire, *q v.*

Gravitation, (grav-i-tā'shun). [L. *gravis*, heavy.]=Universal attraction: the property of all bodies to attract each other, existing in every particle of matter; the force by which all smaller and adjacent bodies are drawn towards the centre of the earth, and by which the planets are kept in their orbits in the solar system.

Gravity, (grav'i-ti). [L. *gravis*, heavy.]= Weight. *Centre of G*: the point in any body round which its weight is symmetrically distributed. *Specific G*: the ratio of the weight of any given solid or liquid substance to the weight of an equal volume of water; or of a given gas to that of an equal volume of air or hydrogen. *G. battery*. a galvanic battery in which the two liquids, such as sulphate of zinc and sulphate of copper, remain separate in the same vessel, because of the difference of specific gravities, so that no porous vessel is needed.

Gray, (grā). [*Grag*, the A.-S. word.] A compound colour; a mixture of white and black. *G. lag:* a duck, probably the species from which all other ducks have descended. *G. wacke* = Grauwacke, *q v.*

Grayling, (grā'ling). = Thymallus vulgaris: a salmon-like fish.


Grayling.

Great, (grāt). [The A.-S. word.] *G. circle sailing*=Tangent sailing. *v.* Sailing. *G. Oolite*=Bath stone, *q.v.* *v.* Oolite.

Greatest common measure. The largest number that will divide two or more other numbers so that the quotients are always whole numbers.

Grebe, (grēb). [*Grebe*, the French name.]= Podiceps Hectori: an aquatic bird.

Grecian architecture. A style of architecture in use in ancient Greece before the use of the arch. *Corinthian:* the most richly ornamented order of Greek architecture. *Doric:* an order of Greek architecture, of Egyptian derivation, in which the columns have no bases. *Ionic:* an order of Greek architecture, of Assyrian derivation, lighter than the Doric, and less decorated than the Corinthian.

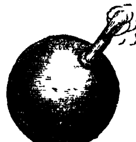
Green, (grēn). [*Grene*, the A.-S. word] A colour intermediate between yellow and blue. *G bone*=Belone vulgaris: also=Zoarces viviparus. a fish. *G blights*=Aphidæ: insects belonging to Homoptera. *G. bottle* =Musca chloris: a bright green fly. *G. crab* =Carcinus mœnas: a crustacean. *G. finch*= Fringilla chloris a bird. *G. heart*=Sipeira =Laurus chloroxylon: a tree resembling the locust tree, found in Guiana. *G. marble*= Serpentine, *q v.* *G. monkey*=Cercopithecus, *q v.*, found in the Cape de Verde Isles. *G. pigments:* derived from copper, chrome, arsenic, potash, &c *G. sand:* a rock, between Wealden and Chalk, not necessarily green in colour *G. stone*=Trap, *q v.*: a variety of trappean rocks, including compounds of felspar, with hornblende or with augite. *G. vitriol*=Sulphate of iron. *G. stars:* Sirius, Vega, Atair, Deneb. *Scheele's G.*=$CuHAsO_3$=Arsenate of copper, used as a pigment.

Greenockite, (grē'nok-īt). A mineral, chiefly sulphide of cadmium.

Gregarinida, (gre-gā-ri'ni-da). [L. *gregarius*, in a herd.] Parasitic microscopic animals, belonging to Protozoa, one of the simplest animal forms known, having no mouth, found in the intestines of insects.

Gregorian, (gre-gō'ri-an). *G. calendar.* *v.* Year. *G. scales:* the scales of A, B, C, and D. *v.* Keys. *G. telescope:* a variety of the reflecting telescope, in which the metallic mirror is pierced by the opening for the eye, invented by Professor Gregory.

Grenade, (gre-nād'). [*Grenade*, the French word.] A small bomb-shell. *v.* Shell.


Grenade.

Grenadilla, (gren-a-dil'-la). The fruit of Passiflora quadrangularis: a large West Indian fruit.

Grewia, (grew'i-a). [Dr. Grew.] A plant belonging to Tiliaceæ.

Grey, (grā). [Gray, *q.v.*] =Gray, *q.v.* *G. lag*= Anser ferus: a duck from which all species of ducks have descended. *G mullet*=Mugil capito. *G. antimony*=A native sulphide of

antimony. *G. copper*=A native sulphide of copper. *G. wacke*=Grauwacke. *G. hound*, a variety of the dog remarkable for swiftness.


Greyhound

Gridiron pendulum. One in which the rod is compound, being composed of several alternate rods of brass and steel, the expansions of which, by heat, or contractions from cold, counteract each other, so that the pendulum is always of the same length.

Griffon, (grif'fon). [The French name.] A popular name for several varieties of the dog, and also for several birds, especially of Vulture gryphus and Martinet noir.

Grilse, (grils). The intermediate stage of salmon; the young salmon. *v.* Salmon.

Grimaldi. A walled plain in the moon more than 100 miles in diameter.

Grinders, (grin'derz). [A.-S. *grindan*, to grind.]=Grinding teeth=Molars, teeth with broad crowns, and two or three fangs, adapted for crushing and grinding food.

Grindstones. Varieties of sandstone, chosen for their hardness and roughness.

Grison, (gris'on). [The French name.]=Silver-haired monkey=Viverra vittata, also=Mustela barbara.

Grisly bear=Ursus ferox. *v.* Ursus.

Gristle, (gris'l). [*Gristl*, the A.-S. word.] A firm, white, elastic tissue resembling bone, but soft, also called Cartilage.

Grit, (grit). [A.-S. *grott*, sand.] A common name for hard varieties of sandstone.

Groats, (grawts). [*Grats*, the A.-S. word.] The seeds of corn, the outer skin being removed. *Embden G.*=Crushed G.: from which oatmeal is obtained.

Groin, (groin). 1. The lower portion of the abdomen. 2. The curve formed by the intersection of arches.

Groined. Formed by the intersection of several arches.

Gromwell, (grom'wel)=Lithospermum: a plant belonging to Boraginaceæ.

Grosbeak=Coccothraustes vulgaris: a bird belonging to Fringillidæ.

Gros, (gros). *G.'s base*=Platindiammine. *G.'s salts*: compound salts of platinum and ammonia.


Grosbeak

Grossales, (gros-sā'lēz). [Grossulariaceæ, *q.v.*] Plants with dichlamydeous polypetalous flowers, pulpy fruit with numerous small seeds, forming a division of Epigynous Exogens.

Grossbeak=Grosbeak, *q.v.*

Grossulariaceæ, (gros-sū-lā-ri-ā'se-ē). [L. *grossulus*, unripe fig.]=Currant-worts: shrubs, sometimes spiny, with axillary flowers, belonging to Grossales.

Grossularia, (gros-sū-lā-ri'a). A pale variety of garnet: also called grossularite.

Grotto of cheeses. A grotto, formed by basaltic eruptions, between Treves and Coblentz.

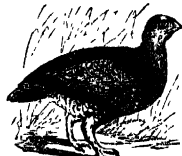
Ground (grownd). *G. bear*=Ursus arctos. *G. hog*=Aard-vark, *q.v.* *G. ivy*=Nepeta glechoma. *G. nuts*=Arachis hypogæa. *G. pearl*=Ant eggs: minute bodies found in collections of shells. *G. pine*=Ajuga chamæpitys. *G. tackle*=Anchor and fittings.

Ground nut oil=Oil of seeds of Arachis hypogæa=Arachidic acid.

Groundling, (grownd'ling)=Cobitis tænia: a fish belonging to Cyprinidæ.

Groundsel, (grownd'sel). [*Grundswilige*, the A.-S. name.]=Senecio vulgaris: an herb belonging to Asteraceæ.

Grouse, (grous)=Tetrao: a poultry-like bird, belonging to Tetraonidæ. *Ruffled G.*=Bonasia.


Grouse

Grove's battery. A galvanic battery, consisting of plates of zinc in dilute sulphuric acid, and plates of platinum in strong nitric acid, which absorbs the hydrogen evolved by the action of the battery: this is a powerful but not constant battery.

Grove's gas battery. Plates of platinum, partly in sulphuric acid, and partly in oxygen and hydrogen alternately: when connected as in a galvanic battery a current passes along the connecting wire from the oxygen to the hydrogen.

Growth, (grōth). [A.-S. *growan*, to grow.] Increase in size: the early stage of development, which essentially requires addition. *v.* Evolution. *G. of coral*: Madrepora, a quick growing coral, has been known to grow 3 inches per year for sixty years.

Grub, (grub). [A.-S. *grafan*, to dig.]—Caterpillar=Larva of holometabolic insects. *v.* Larva.

Gruidæ, (grū'i-dē). [Grus, *q.v.*]=Cranes: a family of birds belonging to Cultirostres.

Grus, (grus). [The Latin name.]=1. Crane: a wading bird, belonging to Grallatores. 2. The Crane: a constellation of the southern hemisphere.

Gryllidæ, (gril'i-dē). [Gryllus, *q.v.*] Crickets, grasshoppers, &c.: family of insects belonging to Orthoptera.

Gryllotalpa, (gril-lo-tal'pa). [Gryllus and Talpa, *q.v.*]=Mole-cricket: an insect belonging to Orthoptera.

Gryllus, (gril'lus). [The Latin name.]=Cricket, grasshopper, &c.: an insect, the type of Gryllidæ.

Gryphæa, (grif-ē'a). A kind of oyster, of which many species are found fossil in Secondary rocks.

Gryphite limestone=Lias: on account of the number of shells of the Gryphæa found in it.

Gryptes, (grip'tēz). *G. Brisbani*=River cod of New Zealand.

Guacharo, (gwa-shä'rō). [Guacharo, in Columbia.] = Steatornis caripensis: a nocturnal frugivorous bird, found in the cave of Guacharo. *G oil:* the fat of the G. bird. *G. seeds:* found in the gizzard of the G. bird.


Guacharo.

Guaco, (gwā'kō). [The native name.] A running plant of Peru.

Guaiacene, (gwā'ya-sēn). [Guaiacum, *q.v.*]= C_5H_8O: an oil obtained from guaiacum.

Guaiacic acid, (gwā'ya-sik) [Guaiacum, *q.v.*] =$C_6H_8O_3$: a crystalline acid, a constituent of guaiacum resin.

Guaiacol, (gwā'ya-kol). [Guaiacum, *q. v.*]= $C_7H_8O_2$ = Guaiacyl hydride, obtained from creosote.

Guaiacum, (gwā'ya-cum). [The Spanish name.] 1. A tree of Guiana, the timber of which is very hard, and called Lignum vitæ. 2. A resin obtained from the plant Guaiacum officinale.

Guaiacyl, (gwā'ya-sil). [Guaiacum, *q.v.*]= $C_7H_7O_2$: the base of Guaiacum.

Guanches. An African people.

Guanidine, (gwā'ni-din). [Guano, *q.v.*]= CH_5N_3: a base obtained from guano.

Guanine, (gwā'nin). [Guano, *q.v.*]=$C_5H_5N_5O$: a base found in guano.

Guanite, (gwā'nīt). [Guano, *q v.*] A mineral, chiefly phosphate of ammonia and magnesia, found in guano.

Guano, (gwa'nō). [The Spanish name.]= Ammonic urate, more or less decomposed, the excrement of sea-fowl, found in great accumulation on the coasts of Peru and Bolivia, owing to the absence of rain, much used as manure.

Guaranine=Theine, *q.v.*

Guava, (gwá va). [The Spanish name.]= Psidium: a tree with globular pulpy fruit. *G. fly-catcher*=Turdus analis.

Gudgeon, (guj'un). [*Goujon*, the French name.] 1.=Gobia fluviatilis: a fish belonging to Cyprinidæ. 2.=Axle or pivot.


Gudgeon

Guelder-rose, (gel'der)=Viburnum opulus: a plant belonging to Caprifoliaceæ.

Guenon. [The French name.]=Green monkey: the French name for Cercocebus and Cercopithecus.

Guillemot, (gil'lē-mot). [The French word.]= Uria: a bird with short tail, narrow wings, and short feet, belonging to Natatores.


Guillemot.

Guinea, (gin'ē). [Guinea, in Africa.] *G. baboon* =Cynocephalus papia. *G. bed*=Monotis bed =Insect bed: a limestone rock belonging to Lias; containing fossil remains of reptiles, &c. *G. fowl*=Numidia meleagris *G. peach*= Sarcocephalus esculentus *G pig*=Cavia cobaya. *G. henweed*=Petiveria alliacea. *G. ship*=Physalia pelagica: a delicate animal belonging to Acalephæ. *G.worm*=Dracunculas, a worm many feet long, belonging to Nematoda.

Gulf-stream. A warm current, running from the Gulf of Mexico, along the N.E. coast of America, and across the Atlantic towards Europe, but is gradually dissipated by contact with the colder water.

Gulf-weed=Sargassum, *q v* =Fucus natans: a sea-weed, belonging to Fucaceæ.

Gull, (gul) [*Gwylan*, the Welsh name].= Larus a bird belonging to Natatores, having powerful wings, and found mostly on coasts. *Herring G.*=Larus argentatus.


Gull.

Gullet, (gul'let). [*Gula*, the Latin word.]=Œsophagus: the tube leading from the pharynx to the stomach

Gulls, (gulz) [Gull, *q v*.]=Laridæ: a family of birds belonging to Natatores, with long pointed wings

Gulo, (gu'lō). [*L gulosus*, gluttonous.] A small carnivorous quadruped, belonging to the plantigrade division of Carnivora *v.* Plantigrade *G. luscus*=Wolverene=Glutton, also called Ursus gulo *G. vittatus*= Grison. Fossil remains found in Miocene rocks.

Gum, (gum). [The A.-S. name.] A vegetable substance found in the juice of many plants. *v* Gums. *Artificial G.*=British Gum. *British G* =Dextrine *Elastic G.*=Caoutchouc *G. Arabic*=Arabin, from Acacia. *G. lac*, *v.* Lac. *G tree*=Eucalyptus: a New Holland tree, often 200 ft. high. *G. tragacanth:* a gum obtained from Astragalus verus. *G. resins:* compounds of gums and resins. *G. wood* = G tree.

Gumatti, (gō-mat'ti). A rough fibrous bark, found on the Gomuti palm.

Gummic acid, (gum'ik). [Gum, *q.v.*]= $C_{12}H_{22}O_{11}$: the potassium and calcium salts of which form gums.

Gums, (gumz). [Gum, *q v.*] 1. The fleshy terminations of the jaws, in which the teeth are fixed. 2. Compounds of resins and essential oils, found in juices of many plants.

Gun, (gun). An engine (essentially a tube) for the discharge of projectiles by means of gunpowder, gun-cotton, &c. Guns may be classed as:—1. Muzzle or breech loaders, with projectiles of hard metal fitting mechanically: such as the Whitworth and Lancaster guns. 2. Muzzle or breech loaders, with projectiles having soft metal studs which fit into grooves: such as the Woolwich and French guns. 3. Muzzle loaders: the projectiles having a metal envelope which is expanded by the gas: such

as the Parrot and Reed guns. 4. Breech loaders: the projectile having a soft metal coating larger than the bore, which is compressed by the gas: such as the Armstrong and Prussian guns. The parts of a smooth bored cast gun are: muzzle, chase, reinforces, cascable, *q.v.*

Gunboat. A small vessel adapted for the carriage and use of one or more guns.

Gun-cotton. $C_{12}H_{14}O_7 3N_2O_5$ = Pyroxylin = Trinitrocellulose: cotton soaked in nitric acid, washed with water, and dried: when ignited is more explosive than gunpowder.

Gun-metal. An alloy of 9 parts of copper with 1 part of tin.

Gunnell, (gun'nel)=Butter fish: a fish belonging to Murænoidæ.

Gunpowder. A mechanical mixture of saltpetre, charcoal, and sulphur, which, when heated, ignites with explosive force.

Gunter's, (gun'terz). *G. chain:* a chain, usually of 100 links, used in surveying and measuring 66 ft. in length *G. line*=Line of numbers on Slide rule *G scale*, on Slide rule.

Gurgoyle, (ger'goil)=Gargoyle, *q.v.*

Gurnard, (ger'nard)=Gurnet=Trigla cuculus: a fish belonging to Loricati.


Gurnet.

Gutta - percha tree, (gut'ta perch'a). [The Malayan name.]=Isonandra gutta: from which is obtained a tough waterproof gum-substance called gutta percha.

Guttiferales, (gut-ti-fer-ā'lēz). [L. *gutta*, drop; *fero*, I bear.] Resinous trees, forming a division of Hypogynous Exogens

Guy Lussac's Law, (gī-lō-saks'). [M. Guy Lussac.] = Dalton's law: that all gases expand equally with equal increase of temperature.

Gymnadenia, (jim-na-dē'ni-a). [Gk *gymnos*, naked, *aden*, gland.] A plant belonging to Orchidaceæ.

Gymnema, (jim-nē'ma). A plant belonging to Asclepiadaceæ. *G. lactiferum*=Cow plant; with milky juice.

Gymno, (jim'nō). [Gk. *gymnos*, naked.] A prefix implying nakedness.

Gymnocarpous, (jim-nō-kar'pus). [Gymno, *q.v.*; Gk. *karpos*, fruit.] Used of plants, whose fruits have no floral envelope.

Gymnocladus, (jim-nok'la-dus). [Gymno, *q.v.*; Gk. *klados*, branch.] Coffee tree=Stump tree. an American tree belonging to Fabaceæ.

Gymnodactylus, (jim-nō-dak'ti-lus). [Gymno, *q.v.*; Gk. *daktylos*, toe.] A reptile, belonging to Geckotidæ.

Gymnodontidæ, (jim-nō-don'ti-dē). [Gymno, *q.v.*; Gk. *odous*, tooth.]=Globe fishes, *q.v.*: a family of fishes belonging to Acanthopteri.

Gymnogens, (jim'nō-jenz). [Gymno, *q.v.*; Gk. *gennao*, I produce.] Plants resembling club-mosses but larger: intermediate between flowering and flowerless plants.

Gymnolæmata, (jim-nō-lē'ma-ta). [Gymno, *q.v.*; Gk. *laimos*, throat.] A primary division of Polyzoa, including animals having no cover to the gullet.

Gymnophiona, (jim-nō-fī'o-na). [Gymno, *q.v.*; Gk *ophis*, snake.]=Ophiomorpha: a division of Amphibia, having elongated rounded bodies without limbs or tail, including Cæcilia, Siphonops, &c.

Gymnophthalmata, (jim-nōf-thal'ma-ta). [Gymno, *q.v.*; Gk. *ophthalmos*, eye.]=Craspedote Medusæ: a division of Hydrozoa, *q.v.* *v.* Medusæ.

Gymnophthalmous, (jim-nof-thal'mus). [Gymno, *q.v.*; Gk. *ophthalmos*, eye.]=Naked eyed. *v* Medusæ.

Gymnops, (jim'nops). [Gymno, *q.v.*; *ops*, eye.] Honey-eater: a sparrow-like bird, belonging to Passeres, named from the head being nearly bald.

Gymnospermeæ, (jim-nō-sper'me-ē) [Gymno, *q.v.*; Gk. *sperma*, seed] Brongniart's term for a division of Exogens, including pines and cycads, the seeds of which are naked.

Gymnosperms, (jim'nō-sperms). [Gymno, *q v*; Gk. *sperma*, seed]=Gymnogens: flowering plants having no ovary, include Cycadaceæ, Coniferæ, and Gnetaceæ.

Gymnotus, (jim nō'tus). [Gymno, *q v.*; *notos*, back.] A fish belonging to Murænidæ. *G. electricus*=Electric eel, about 6 ft. long, found in S. America.

Gynandria, (jin-an'dri-a). [Gk. *gyne*, woman; *aner*, man.] One of the classes in the Linnæan classification of plants, including plants in which the stamens and pistil are consolidated.

Gynandrous, (jin-an'drus). [Gk. *gyne*, woman, *aner*, man.] Having the stamens, style, and stigma all consolidated, a sub-division of Monocotyledons.

Gyno- (jin'ō). [Gk. *gyne*, woman.] A prefix implying female

Gynœceum, (jin-ē'si'um). [Gk. *gyne*, woman, *oikos*, house.] The whole of the female organ of a plant.

Gypaetos, (gi-pā'e-tos). [Gk. *gyps*, vulture; *aetos*, eagle] A large bird of prey, belonging to Vulturidæ. *G barbaetos*=bearded vulture.

Gypogeranus, (gi-pō-jer'a-nus.) [Gk. *gyps*, vulture.] A vulture-like bird. *G. serpentarius*=Secretary bird.

Gyps, (gips). [The Greek name.] A bird of prey, belonging to Vulturidæ. *G. Bengalensis*=Bengal vulture. *G. fulvus*=Griffon vulture.

Gypsey, (gip'si). A Yorkshire name for a rivulet.

Gypsies, (jip'siz). [Gipsy, *q.v.*] *v.* Gipsies. *Sea G.*=Badjows=a tribe of Borneo.

Gypsocallis, (jip-so-kal'lis). [Gk. *gypsos*, lime; *kallistore*, beautiful.]=Moor-heath, *q.v.*

Gypsum, (jip'sum). [The Latin word.]=Plaster of Paris=a variety of sulphate of lime which solidifies when mixed with water: used in modelling, as a manure, and in building. *Crystallised G.*=Selenite. *G. group of minerals*, includes gypsum, selenite, alabaster, anhydrite, &c.

Gypsy=Gipsy, *q.v.* *G. wort*=Lycopus.

Gyracanthus, (jī-ra-kan'thus). [Gk. *gyros*, circle; *akantha*, spine.] A fish, known by fossil remains found in Coal Measures.

Gyration, (jī-rā'shun). [Gk. *gyros*, circle.]= Angular oscillation. *v.* Oscillation. Revolution round a fixed centre.

Gyrencephala, (jī-ren-sef'a-la). [Gk. *gyros*, circle; *encephalon*, brain.]=Quadrumana, Cetacea, Carnivora, &c., of which fossil remains are found only in Tertiary rocks. Owen's term for a division of Mammalia, including Quadrumana, the more common quadrupeds, and whales.

Gyrfalcon, (jer-faw'kn). [Gk. *gyros*, circle; Falcon, *q.v.*] A bird of prey, belonging to Falconidæ.

Gyrinus, (ji-rī'nus). [L. *gyrinus*, tadpole.] 1=Axolotl, *q.v.* 2. An insect; one of the water beetles.

Gyrodus, (jī-rō'dus). [Gk *gyros*, circle; *odous*, tooth.] A fish, known by fossil teeth, found in Wealden, Oolite, &c.

Gyrogonites, (jī-rog'ō-nīts) [Gk. *gyros*, round; *gonia*, corner.] Fossil Characeæ, named by Lamarck on the supposition of their being testaceous animals.

Gyrolepis, (jī-rol'e-pis). [Gk. *gyros*, circle; *lepis*, scale.] A ganoid fish, known only by fossil scales found in the Lias.

Gyrophora, (jī-rof'o-ra) [Gk. *gyros*, circle; *phoro*, I bear.] A lichen, some species of which are edible.

Gyrophoric acid, (jī-rof'or-ik). An acid obtained from Gyrophora.

H

Habenaria, (ha-bē-nā'ri-a). [L. *habena*, thong.] A genus of orchids; named from shape of spur. *H. bifolia* = Butterfly orchis. *H. viridis*=Frog orchis.

Hackberry, (hak'ber-ri) An American tree, resembling the elm, with edible fruit.

Hackly, (hak'li). [Dutch *hekel*, comb.] 1. Covered with fine points; rough. 2. Brittle; easily broken.

Haddock, (had'dok) [*Hadog*, the Welsh name.]=Morrhua æglefinus. a fish, belonging to Gadidæ.

Hædi, (hē'di).=ζ and η Aurigæ: two stars in the constellation Auriga.

Hæmal, (hē'mal) [Gk. *haima*, blood.] Belonging to the circulating system. *H. flexure*=bending towards the heart. *H. system*=Blood circulation, in all vertebrate animals. *H. tube*=Ventral tube, containing heart, lungs, alimentary system.

Hæmatein, (hē'ma-tīn). [Gk. *haima*, blood.]= $C_{16}H_{12}O_5$: a crystalline substance obtained from Hæmatoxylin.

Hæmatin, (hē'ma-tin). [Gk. *haima*, blood.]= $C_{16}H_{12}O_6$=Hæmatosin=the colouring matter of blood. Amorphous, found only in vertebrate animals. Also said to be of much more complex constitution and not formed in blood, but obtained from it by the action of acids.

Hæmatite, (hē'ma-tīt). [*Haimatites*, the Gk word.] Blood-stone. An ore of iron: one of the iron group of minerals, crystallising in cubes. 1. Hydrated ferric oxide=Brown H.=2 $Fe_2O_3.3H_2O$. 2. Ferric oxide=Red H. =Fe_2O_3.

Hæmatococcus, (hē-ma-tō-kok'kus). [Gk. *haima*, blood; *kokkos*, grain.] A plant, belonging to Algæ; sometimes red coloured.

Hæmatocrya, (hē-ma-tok'ri-a). [Gk *haima*, blood; *cryos*, cold.]=Cold-blooded vertebrates: includes fishes, amphibia, and reptiles. *cf.* Hæmatothermal.

Hæmatocryal, (hē-ma-tok'ri-al). [Gk. *haima*, blood; *cryos*, cold.] Owen's term for cold-blooded vertebrates; those which have less complex heart and breathing organs=fishes, amphibia, reptiles.

Hæmatocrystallin, (hē-ma-to-kris'tal-lin). [Gk. *haima*, blood, Crystalline, *q.v.*]=Hæmoglobin: a crystalline matter, obtained from blood.

Hæmatoidin, (hē-ma-tō'i-din). [Gk *haima*, blood]=$C_{14}H_{18}N_2O_3$: a crystalline substance found in blood, probably=Bilirubin.

Hæmatolin, (he-mat'o-lin). [Gk. *haima*, blood.] A substance obtained from Hæmatin, by the action of sulphuric acid.

Hæmatopus, (hē-ma-tō'pus).=Oyster catcher: a bird, belonging to Grallatores, having a fleshy tongue, and feet adapted to running; found on sea shores.

Hæmatornis, (hē-ma-tor'nis). [Gk. *haima*, blood; *ornis*, bird.] A bird of prey, belonging to Falconidæ.

Hæmatotherma, (hē-ma-to-ther'ma). [Gk. *haima*, blood, *thermos*, hot.]=Warm-blooded vertebrates=Mammalia and birds.

Hæmatothermal, (hē-ma-tō-ther'mal) [Gk. *haima*, blood, *thermos*, hot.] Owen's term for the division of vertebrate animals containing mammalia and birds: animals with four-chambered heart, spongy lungs, and hot blood. *cf.* Hæmatocryal.

Hæmatoxylin, (hē-ma-toks'i-lin). [Gk *haima*, blood, *xylon*, wood.]=$C_{16}H_{14}O_6$: the crystalline colouring matter of logwood.

Hæmatoxylon, (he-ma-toks'i-lon). [Gk. *haima*, blood; *xylon*, wood.] A plant, belonging to Fabaceæ. *H. Campeachianum*=Logwood.

Hæmodoraceæ, (hē-mo-dō-rā'se-ē). [Hæmodorum, *q.v.*]=Blood roots: herbaceous plants with sword-shaped leaves and red coloured roots, belonging to Narcissales.

Hæmodorum, (hē-mo-dō'rum). [Gk *haima*, blood; *doron*, gift.] The typical genus of Hæmodoraceæ.

Hæmoglobin, (hē-mo-glō'bin). [Gk. *haima*, blood.] = Cruorin = Hæmatocrystallin: in muscular tissue. A constituent of blood, upon which the power to absorb oxygen seems to depend. The quantity of H. increases with age, and it is more abundant in males than in females.

Hæmorrhage, (hē'mor-āj). [*Haimorrhagia*, the

Greek word.] A flow of blood, as from a wound.
Hærnesite, (hėr'ne-sīt). A mineral of the Pharmacolite group.
Hag, (hag). Myxine: a fish, belonging to Cyclostoma. *Glutinous H.*=Myxine glutinosa covered with secreted mucous
Hags, (hagz). [Plural of Hag.]=Myxinidæ: eel-like fishes, with sucker-like mouths, usually found in larger fishes.
Haidingerite, (hā-din'jer-īt). 1. An ore of calcium: chiefly hydrated arsenate of calcium. 2 Berthierite: sulphide of iron and stibium.
Hail, (hāl). [*Hagal*, the A.-S. word] Small pieces of ice: frozen rain.
Haimean bodies, (hā'me-an). Large refractile cells in the nervous system of Actinia.
Hair, (hār). [*Har*, the A.-S word.]=Trichome: a tubular, scaly modification of the epidermis common to all mammalia except whales and porpoise: in hedgehogs and porcupines, become spines. Hairs are peculiar to warm-blooded vertebrates, and in the warmest blooded, birds, they become feathers: *H bell*=Campanula rotundifolia. *H. flag*=Plocamium *H. grass*=Aira: a plant, belonging to Gramminaceæ. *H. hygrometer*=Saussure's hygrometer. *H. moss*=Polytrichum *H. salt*: efflorescence of sulphate of magnesium. a silky fibrous variety of Epsomite *H. tail*=Trichiurus, a fish having a hair-like tail. *H. worms*=Gordiaceæ.
Hairs, (hārz). [Plural of Hair, *q v*]=Trichomes: horny modifications of the epidermis, found in all mammalia. *v* Hair.
Haje=Coluber haje: a serpent, belonging to Colubridæ.
Hake, (hāk). [G *hecht*, pike]=Merlucius=Gadus merlucius: a fish, belonging to Gadidæ. *H.'s-dame*=Phycis furcatus.


Hake

Halcyon, (hal'si-on). [*Alcyon*, the Latin name.]=King-fisher: a bird, belonging to Insessores.
Halcyonidæ, (hal-si-on'i-dē). [Halcyon, *q v*: Gk *eidos*, form]=Halcyonoids, Kingfishers: a family of birds belonging to Fissirostres.
Halcyonium, (hal-si-ō'ni-um). A sub-division of Zoophyta
Halcyornis, (hal-si-or'nis). [Halcyon, kingfisher; Gk, *ornis*, bird] A bird, known by fossil remains in London clay.
Hale's apparatus. For measuring the force of ascending sap in plants
Halesia, (hā-lē'si-a). [Dr Hales.] A plant, the type of Halesiaceæ. *H. tetraptera:* snowdrop tree.
Halesiaceæ, (hā-lē-si-ā'se-ē). [Halesia, *q v*]=Styracaceæ, *q.v.*
Half apes, include Cheirogaleus, Galago, Tarsius.
Half beak=Hemiramphus a sea pike, which has the lower jaw longer than the upper.
Half breadth plan of a ship: the horizontal plan, showing one-half of the ship
Haliæetus, (hal-i-ē'tus). [Gk. *Halios*, marine; *aetos*, eagle.] A bird of prey, belonging to Falconidæ. *H. leucocephalus*=Sea eagle. *H. macei*=Fisher eagle.
Halibut, (hal'i-but). [*Heilbut*, the German name.]=Pleuronectes hippoglossus: a large flounder fish, weighing 4 or 5 cwt.


Halibut

Halicore, (hal'i-kōr). [Gk. *halios*, marine; *kore*, damsel.]=Dugong: a cetacean animal belonging to Manatidæ.
Halidracon, (hal-id'ra-kon). [Gk. *halios*, marine, *drakon*, serpent]=Plesiosaurus, *q v.*
Halimodendrum, (hal-i-mō-den'drum). [Gk. *halimos*, sea· *dendron*, tree.]=Salt-tree: a plant belonging to Fabaceæ.
Haliotidæ, (hal-i-ō'ti-dē). [Haliotis, *q v.*]=Ear-shells: a family of molluscous animals, belonging to Gasteropoda.
Haliotis, (ha-li-ō'tis). [Gk. *hals*, sea; *ous*, ear.]=Sea-ear: a molluscous animal, named from the shape of the shell; the type of Haliotidæ.
Halite, (hā'līt). [Gk. *hals*, salt: *lithos*, stone.] Common salt, when in the form of rock-salt: a mineral, chiefly chloride of sodium, also called rock-salt, muriate of soda, &c. *H. group of minerals:* Halite, nitre, epsomite, boracite, &c.
Halitherium, (hal-i-thē'ri-um). [Gk. *halios*, marine; *therion*, beast.] A cetacean animal, resembling the dugong, known by fossil remains, found in Tertiary. *v.* Sirenia.
Halleriaceæ, (hal-ler-i-ā'se-ē)=Scrophulariaceæ, *q.v.*
Halley, (hal'li). [Halley, the astronomer.] 1. A crater in the moon. 2. H.'s comet; returns every 76 years: last appearance 1835: next expected in 1911. 3 H method of observing transit; observing the duration of the transit at two different stations; the sun's distance is determined by the difference of these times.
Hallier's theory of disease. In typhus, measles, vaccinia, &c; that micrococci are present, and when cultivated become fungi; it is not certain which of the two, disease or fungus, is cause and which effect.
Hallite, (hal'līt). [Gk. *hals*, salt.]=Aluminite, *q v.*
Halloylite, (hal'loi-līt). [Mr. Hally; Gk. *lithos*, stone.]=Halloysite: a mineral, chiefly hydrated silicate of alumina, magnesium, and calcium.
Hallux, (hal'luks) [L. *hallex*, great toe.]=Great toe: in man, but slightly adductive and abductive; in apes and monkeys freely movable; in Insectivora has a claw; resembles the other toes in Cheiroptera and Carnivora.
Halmaturus, (hal-ma-tū'rus). 1. Used for kangaroos generally. 2. A small species of kangaroo.
Halo, (hā'lō). [The French word.] A luminous circle; especially a ring of light round the sun or the moon.
Halogens, (hal'ō-jenz). [Gk. *hals*, sea-salt; *gennao*, I produce.]=Bromine, chlorine, fluorine, and iodine; monad electro-negative

chemical elements, combining readily with other, electro-positive, substances, and forming with the metals compounds resembling sea-salt.

Haloid, (hā'loid). [Gk. *hals*, salt; *eidos*, form.] Resembling salt. *H. ethers:* compounds of organic radicles, with halogens. *H. group of minerals:* calcite, halite, fluorite, gypsum, &c. *H. salts:* combinations of metals with hydrogen acids, resembling common salt. *v.* Halogens. *v.* Salts.

Haloragaceæ, (hal-ō-ra-gā'se-ē). [Haloragis] =Hippurids=Mare's tail, &c.; aquatic herbs, with small axillary flowers, belonging to Myrtales.

Halotrichite, (hā'lō-tri-kīt). [Gk. *hals*, sea, *thrix*, hair] 1. A silky fibrous mineral, chiefly hydrated sulphate of iron and aluminum; also called Halotrichine. 2.=Alunogen; hydrated sulphate of aluminum.

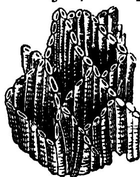
Halteres, (hal-tē'rez) [Gk. *halteres*, weights] Second wings of Diptera, also called *balancers;* modified into small nobbed stalks.

Haltica, (hal'ti-ka). [Gk. *haltikos:* able to leap.]=Turnip flea, garden flea, &c.; leaping insects, belonging to Coleoptera.

Halticocoridæ, (hal-ti-kō-kor'i-dē). [Gk. *haltikos*, able to leap: *koris*, bug.]=Jumping-bugs, a family of insects, belonging to Heteroptera.

Halysichnus, (hal-i-sik'nus). [Gk. *halysis*, chain, *ichnos*, track.] A worm-like animal known only by its fossil track, belonging to Annelidan Lithichnozoa. *v.* Lithichnozoa.

Halysites, (hal-i-sī'tēz). [Gk. *halysis*, chain.] Corals, plentiful in Upper Silurian. *H. catenularius* =Chain coral.


Halysites.

Hamadryas,(ham-ā'dri-as). [L. *hamadryas*, wood-nymph.] 1. A hooded serpent with poison fangs, found in hollow trees. 2. A plant belonging to Ranunculaceæ.

Hamal = *a* Arietis: the chief star in the constellation Aries.

Hamamelidaceæ, (ham-a-mel-i-dā'se-ē). [Hamamelis, *q.v.*] = Witch-hazels: shrubs and trees, with deciduous leaves and axillary flowers, belonging to Umbellales. Fruit and flower grow at same time.

Hamamelis, (ham-a-mē'lis). [Gk. *hama*, with; *melon*, fruit.] = Witch-hazel: a plant, the type of Hamamelidaceæ, named from fruit and flowers coming in same time of year.

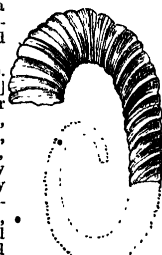
Hamartite = Hydrofluocerite: a mineral, chiefly carbonate of lanthanum and cerium.

Hamburgh white = Barytes: used as a pigment.

Hamilton's triangle. [Sir W. Hamilton.] *v.* Quaternions.

Hamipes, (hā'mi-pes. [L. *hamus*, hook; *pes*, foot.] A crustacean animal known only by fossil tracks. *v.* Lithichnozoa.

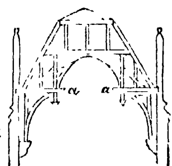
Hamites, (hā-mī'tēz). [L. *hamus*, hook.] Cephalopods, having a hooked shell, many species of which are found in Chalk rocks.


Hamites

Hammer, (ham'mer). [*Hamer*, the A.-S word.] *Power H.*, a hammer moved by machinery, by means of water, steam, &c. *Steam H.*, a hammer worked by steam: usually of very large size, consists essentially of a mass of steel, sliding in a vertical frame, and connected directly with the piston rod of a steam engine.

Hammer-beam. A beam reaching only partially across an opening.

Hammer-engine. A variety of the direct-acting vertical steam-engine: named from the supporting frame resembling that of a steam-hammer.



a Hammer-beam

Hammer-headed shark = Zygæna malleus: has eye-balls at the end of projections from the side of the head.

Hamster, (ham'ster). [The German name.]= Cricetus=Mus cricetus: a rat-like animal belonging to Rodentia, has large cheek pouches. *H. of Canada* = Canada pouched rat.


Hamster.

Hamular, (hā'mū-lar) [L. *hamus*, hook.] Hook-like.

Hand, (hand). [The A.-S. word] = Manus; the extremity of the pectoral limb in man. *H. beast* = Cheirotherium, *q.v.* *H. tree* = Cheirostemon platanoides: the five anthers resemble digits

Hanging-bird=Hang-nest=Baltimore oriole: a bird which builds a purse-shaped hanging nest. The sexes are alike, and conspicuously coloured.


Hang-bird.

Hapale, (hap'a-le). [Gk. *hapalos*, tender.] =Jacchus: a monkey belonging to Platyrhina. *H. jacchus* = Marmoset-monkey.

Hapalemur, (hap-al'e-mur). [Hapale and Lemur, *q.v.*] An animal belonging to Lemurinæ, found only in Madagascar.

Hapalinæ, (hap-al'i-nē). [Hapale, *q.v.*] A sub-family of Cebidæ.

Haplacanthus, (hap-la-kan'thus). [Gk. *haploos*, simple; *akantha*, spine.] A plagio-

stomic fish; known only by fossil remains found in Devonian rocks.

Haplophlebium, (hap-lō-fleb'i-um). [Gk. *haploos*, simple; *phleps*, vein.] An insect. *H. Barnesii:* known only by a fossil wing, found in 1867.

Hard, (hȧrd). [*Heard*, the A.-S. word.] *H. grass*=Rottbœlia. *H. palate:* in the roof of the mouth. *v.* Palate. *H. solder:* an alloy of brass and zinc. *H. water:* water containing matters, such as metallic substances, which will combine with soap so as to prevent its solubility.

Hardness, (hȧrd'nes). [Hard, *q.v.*] Resistance to abrasion. *Scale of H.:* use to determine the degree of hardness in minerals: consists of diamond, corundum, topaz, quartz, orthoclase, apatite, fluor, calcite, gypsum, and talc: these form a series decreasing in hardness.

Hare, (hār). [*Hara*, the A.-S name.] Lepus: a very prolific fur-bearing animal, belonging to Rodentia. *H. bell*=1. Campanula rotundifolia, 2. Hyacinthus nutans. *H.'s ear*= 1. Bupleurum; 2. Erysimum austriacum. *H.'s foot*=Ochroma lagopus. *H.'s foot fern*= Aspidium barometz. *H. lip:* usually the upper lip, when the fissure exists, owing to incomplete development. *H.'s tail grass*= Lagurus.

Hare's deflagrator. A galvanic cell, formed by two large sheets of copper and zinc arranged in a spiral, but separated by leather and placed in dilute sulphuric acid; produces great heat in working.

Harlech grits, (hȧr'lek). [Harlech, in North Wales.] A sub-division of Longmynd rocks, *q v.*

Harlequin beetle=Acrocinus longimanus.

Harmaline, (hȧr'ma-lin) [Gk. *harmala*, red] =$C_{13}H_{14}O_2$: a crystalline base, found in seeds of Peganum harmala.

Harmatone, (hȧr'ma-tōn). A mineral of the Zeolite group, chiefly silicate of aluminum and barium.

Harmattan, (hȧr'mat-tan). [The Arabic word] A hot, dusty wind of Africa.

Harmonia, (hȧr-mō'ni-a). [The Latin word.] No. 40 of the Minor Planets, *q v.*

Harmonic, (hȧr-mon'ik). [Harmony, *q v.*] Related to harmony. *H. ratio:* the ratio between numbers whose reciprocals are in arithmetical proportion: thus 1, 5, 9, 13, being in arithmetical proportion, $\frac{1}{1}, \frac{1}{5}, \frac{1}{9}, \frac{1}{13}$ are in harmonical proportion. *H. sound of flames*, *v.* Singing flames. *H. tones:* higher notes also produced when any given musical note is sounded. *v.* Sound.

Harmony, (hȧr'mō-ni). [*Harmonia*, the Latin word.] 1. A variety of suture; a method of union in anatomy, in which the pieces are fitted together without being fastened. 2. Concord of musical sounds. *v* Sound. *H of spheres:* the regular movements of the heavenly bodies, in which the planets are compared to the notes of a musical scale. Jupiter is named *Do;* Saturn=*Re;* the Moon =*Mi;* Mercury=*Fa;* Venus=*Sol;* Sun=*La.*

Harpagopus, (hȧr-pag'o-pus). [Gk. *harpage*, sickle; *pous*, foot.] An invertebrate animal, probably crustacean, known only by its fossil tracks. *v.* Lithichnozoa.

Harpedactylus, (hȧr-pe-dak'ti-lus). [Greek *harpe*, sickle; *dactylos*, toed] A lizard, known only by its fossil tracks. *v.* Lithichnozoa.

Harpins, (hȧr'pinz). [F. *harper*, to grapple] =Heads=Diagonals: connecting timbers at the extremities of a vessel; used during building.

Harpy eagle, (hȧr'pi). [*Harpyia*, the Latin name.]=Harpyia: a powerful bird of prey, belonging to Falconidæ.


Harpy-eagle

Harquebus, (hȧr'ke-bŏs) [*Arquebuse*, the French word] An old form of musket.

Harrier, (hȧr'ri-er). [1. *Harry*, to rob, 2 hare, *q v.*] 1 =Circus: a hawk; 2. a dog, used in hare-hunting. *Moor H.*=Circus rufus. *Hen H.* =Falco cyaneus=Circus cyaneus.

Hart's tongue=Scolopendrium: a fern found on damp rocks, near wells, &c.

Hartin, (hȧr'tin). $C_{10}H_{17}O$: a resin, obtained from lignite.

Hartite, (hȧr'tīt). C_6H_{10}: a translucent mineral, belonging to the Fichtelite group, *q.v.*; a fossil resin, found in fossil pine trees and in coal beds.

Hartshorn, (harts'horn). *Spirits of H* =Ammonical liquor, obtained from distillation of horn and of bone; also used for any solution of ammonia in water.

Harvest. *H. fly*=Cicada. an insect belonging to Homoptera. *H. moon:* at the end of September, when the full moon rises soon after sunset. *H. mouse*=Micromys minutus: a very small, insectivorous mouse, which builds a pensile nest; found at harvest time. *H. spiders*=Phalangidæ. *H. ticks*=Leptidæ.

Hastings sand=Middle Wealden: a sub-division of the Wealden, *q v.*

Hatchetin, (hach'et-in). [Mr. Hatchett.]= Hatchettite=Mineral tallow: a solid bitumen, *q.v.* An inflammable mineral, found in bogs and coal beds.

Hatchway, (hach'wā). An opening on the deck of a ship; for a staircase entrance.

Haulm, (hawm). [*Halm*, the A.-S. word.] Decaying herb stems, straw, &c.

Hausmannite, (haws'man-nīt). [M. Haussman.]=Mn_3O_4. An oxidised ore of manganese, also called Black Manganese.

Haustellata, (haw-stel'la-ta). [L. *haurio*, I draw.] A primary division of insects, including Lepidoptera, Diptera, Aphaniptera, Hemiptera, Hemoptera, all of which are provided with suckers. 2.=Epizoa: parasitic crustaceans.

Hauyne, (haw'in). [Mr. Haüy.]=Haüynite: a mineral, chiefly silicate of aluminum, potassium, sodium, and calcium.

Hawfinch, (haw'finch).=Cocothraustes: a bird belonging to Insessores.

Hawk, (hawk). [*Hafoc,* the A.-S. word.]= Accipitor: a bird of prey, belonging to Falconidæ. *Man of War H:* = Trachypetes aquila. *Secretary H.*= Gypogeranus. *Sparrow H.*=Accipiter nisus. *H. bit*=Leontodon: a plant, belonging to Asteraceæ. *H. moth* = Sphinx. *H. owl*=Strix surnia. *H weed*= Hieracium: a plant belonging to Asteraceæ.



Swallow-tailed Hawk.

Hawk's. *H. beard*=Crepis: an herb, belonging to Asteraceæ. *H. bill turtle.* v. Turtle.

Hawse, (hawz). [F. *hausser,* to raise.] *H. holes:* in the bow of a ship, to allow of the cable of the anchor passing through. *H. pieces:* the timber in which the hawse holes are cut. *H. plugs:* used to fill the hawse holes. *H. timbers:* next to, and behind, the knight-head of a vessel.

Hawser, (hawz'er). [F. *hausser,* to raise.] A small cable.

Hawthorn, (haw'thorn). [A.-S. *haga,* hedge; Thorn, *q v.*]=Cratægus. a plant, usually a tree, belonging to Rosaceæ.

Hay's composition, used for making waterproof joints and surfaces.

Hazel, (hā'zel)=Filbert=Corylus avellana: a plant, belonging to Corylaceæ. *H moth*= Tortrix sorbiana.

Head, (hed). [*Heafod,* the A.-S. word]. The most important, or the uppermost portion of a body. In the higher animals contains the organs of the sense and the mouth. *Long H.:* having the length more than $\frac{5}{4}$ of breadth. *Short H:* having the length less than $\frac{5}{4}$. *H. animals*=Vertebrata. *H. of a bone:* a globular articulating surface. *H. of Medusa*=Algol, *q.v.*: a star=β Persei. *H. of water:* an accumulation of water at a high level, so as to be applicable to use as motive power.

Header. *v.* Brick.

Headon series, (hē'don). [H. in the Isle of Wight.] Fresh-water and marine beds belonging to Upper Eocene.

Hearing, (hē'ring). [A.-S. *hyran,* to hear] The sensation produced by the excitement of the auditory nerve; the fine terminal fibres of which are connected with the ear

Heart, (härt). [*Heort,* the A.-S. word.] The centre of the circulating system; in mammals, birds, and crocodiles has four distinct cavities enclosed in a pericardium; in fishes has one auricle and one ventricle; in Batrachians one ventricle; in lancelet and Ascidians is a simple muscular contractile tube; in Brachiopoda is a pseudo-heart of a ventricle and auricle opening into the body cavity; in Tunicata works alternately, each end being in turn both arterial and venous. *H. urchins:* a variety of Echinoidea. *H. wood* =Duramen, *q.v.* *Rudimentary H.:* a simple tube. *Lymphatic H.:* a pulsatile portion of the lymphatics, which is regularly contractile. There are several of these in many reptiles and birds.

Hearts-ease=Pansy=Viola tricolor: a small fragrant herb, belonging to Violaceæ, fertilised by means of humble bees only.

Heat, (hēt). [The A.-S. word.] A variety of molecular motion; a form of energy, consisting of exceedingly small and rapid vibrations. *Animal H:* of man, about 98° F; of human blood, about 106° F. *Latent H.*=*Absorbed H.:* heat which does not affect the thermometer. *Specific H.*=Capacity for absorbing heat. *H. of combustion:* heat developed in chemical combination. *H. of friction:* heat developed by friction. *H. of spectrum:* increases from the violet end to the red end, and is greatest beyond the red extremity. *Dynamical theory of H.*=*Mechanical theory of H:* that heat is a motion of the ultimate particles of matter. *Exchange of H, v.* Exchange. *Generation of H.:* the conversion of some other phase of energy into heat. *Measurement of H.:* by quantity=Calorimetry; by degree or temperature = Thermometry. *Mechanical equivalent of H.*=About 722 foot-pounds, *i.e.*, one pound of water to be heated 1° F., requires heat sufficient to raise 772 lbs. one foot against gravity. *Polarization of H., v.* Polarization.

Heath, (hēth). [*Hæth,* the A.-S. word.] 1 = Erica. 2.=Calluna vulgaris. *Cornish H.*= Erica vagans. *St. Dabeoc's H.*=Dabœcia. *Moor H.*=Gypsocallis.

Heather, (heтнer). [The Scotch word.] Heath, *q v.*

Heaths, (hēths). [Heath, *q.v.*] Plants belonging to Ericaceæ, mostly confined to the Cape of Good Hope.

Heath-worts, (hēth'wurts). [Heath and Wort, *q.v.*]=Ericaceæ, *q v.*

Heavy spar=Barite=Barytes, *q.v.*: a mineral, chiefly native sulphate of barium.

Heavy spar group of minerals: includes strontianite, barite, celestite, &c.

Hebe, (hē'bē). [Classical.] No. 6 of the Minor Planets.

Hecdecane, (hek'de-kān)=Dioctyl = $C_{16}H_{26}$. *v.* Octyl.

Hecto, (hek'tō). [Gk. *hekaton,* hundred.]= 100 times: a prefix used in Metric system, *q.v.*

Hectometre=100 metres=328·080 feet.
Hectogram=100 grams=3·2 ounces.
Hectare=100 ares=2·47 acres.
Hectolitre=100 litres=22 gallons.

Hectocotyle, (hek-tō-kot'i-lē). [Gk. *hekaton,* hundred; *kotylos,* cup.]=Hectocotylus, *q v.*

Hectocotylus, (hek-tō-kot'i-lus). [Gk. *hekaton,* hundred; *kotylos,* cup.] One of the armlike processes in the cuttle-fish and nautilus, which is modified for the purpose of reproduction, and has numerous suckers.

Hedenbergite, (hed'en-berg-īt). A variety of augite; a mineral, chiefly silicate of lime and magnesia.

Hedera, (hed'er-a). [The Latin name.] A

plant, the type of Hederaceæ. *H. helix*= Ivy.

Hederaceæ, (hed-er-ā'se-ē). [Hedera, *q.v.*] Ivy, &c.=Araliaceæ, *q.v.*

Hederic acid, (hed'er-ik). [Hedera, *q v.*] An acid obtained from the seeds of Ivy.

Hedge, (hej). [*Hege*, the A.-S. word.] *H. hog*=Erinaceus. *H. hogs*=Medicago disciformis. *H. mustard* = Sisymbrium. *H. parsley* = Torilis: a sub-genus of Caucalis. *H. sparrow*. *v.* Sparrow


Hedgehog

Hedræophthalmata, (hed-rē-of-thal'ma-ta) [Gk. *hedraios*, sessile; *ophthalmos*, eye]=Hedræophthalma.

Hedræophthalmia, (hed-rē-of-thal'mi-a). [Gk. *hedraios*, sessile, *opthalmos*, eye] A division of Crustaceæ, including those having sessile eyes=Edriophthalmia, *q.v.*

Hedyotis, (hē-di-ō'tis). [Gk *hedys*, sweet, *ous*, ear.]=Ear-wort: a plant belonging to Cinchonaceæ.

Hedyphane, (hē'di-fān) [Gk. *hedys*, sweet, *phaino*, I shine] A mineral, chiefly oxide of lead and calcium

Hedysarum, (he-dis'a-rum). [Gk *hedusaron*, sweet-smelling] A plant belonging to Leguminaceæ. *H. coronarium*=French honeysuckle. *H. gyrans*=Moving saintfoin.

Heel, (hēl). [The A.-S. word.] The hinder portion of the foot.

Height, measurement of. 1. By Trigonometry, *q.v* 2. By barometer, *q v.* 3. By boiling point of water. *v* Boiling.

Heisch's test for sewage in water. The addition of granulated sugar and exposure for several hours to light, causing the presence of a fungus if there be any sewage.

Helamys, (hel'a-mys). [Gk *hellos*, fawn, *mus*, rat] A rat-like animal, resembling the jerboa, also called Pedetes, belonging to Rodentia. *H. capensis*=Jumping hare.

Helarctos, (hel-ark'tos). [Gk *hellos*, fawn; *arctos*, bear.] A variety of the bear. *v.* Ursus. *H. Malayanus* = Malay bear. *H. euryspilus*=Bornean bear.

Helcura, (hel-kū'ra). [Gk. *helko*, I drag; *oura*, tail] A tortoise-like animal, known only by fossil tracks. *v.* Lithichnozoa.

Helen's (St) series. [St. Helen's, in the Isle of Wight]=Osborne series, *q v.*

Helenin, (hel'e-nin)=$C_{16}H_{14}O_5$· a crystalline substance obtained from the plant Inula helenium.

Heliacal, (he-lī'a-kal). [Gk. *heliakos*, belonging to the sun.] Closely connected with the sun; used of a star which is seen near the sun.

Helianthemum, (hē-li-an'the-mum). [Gk. *helios*, sun; *anthemon*, flower.]=Rock-rose =Sun-rose: a plant belonging to Cistaceæ

Helianthoid, (hē-li-an'thoid). [Helianthus, *q.v.*; Gk. *eidos*, form.] Resembling the sunflower. *H. polypes*=Zoantharia.

Helianthus, (hē-li-an'thus). [Gk. *helios*, sun; *anthos*, flower]=Sun-flower, a plant belonging to Asteraceæ

Helichrysum, (hē-lik-rī'sum). [Gk. *helios*, sun, *chrysos*, gold] Everlasting flower a plant belonging to Asteraceæ.

Helicidæ, (he-lis'i-dē). [Helix, *q v.*] Snails: a family of molluscous animals belonging to Gasteropoda.

Helicin, (hel'i-sin). $C_{13}H_{16}O_7$: a crystalline substance obtained from salicin.

Helicoidal, (hē-li-koi'dal). [Helix, *q.v.*; Gk. *eidos*, form] Spiral.

Helicoidea, (hē-li-koi'de-a). [Helix, *q v.*; Gk. *eidos*, form] A division of Foraminifera, including those whose segments are in a spiral form.

Helicoidin, (hel-i-koi'din)=$(C_{26}H_{34}O_{14})_2 3H_2O$: a crystalline substance obtained from salicin.

Heliconii, (hē-li-kō'ni-ī). [Gk. *helios*, sun.] A family of butterflies: not eaten by birds nor by monkeys

Heliocentric, (hē-li-ō-sen'trik). [Gk *helios*, sun, *kentron*, centre.] Having the sun as centre.

Heliography, (hē-li-og'ra-fi) [Gk *helios*, sun; *grapho*, I write] 1 A description of the sun. 2 =Photography

Heliolites, (hē-li-ō li'tēz). [Helix, *q v.*; Gk. *lithos*, stone] Fossil remains of corals, many species of which are found in Devonian and Silurian rocks. have beautiful cœnenchyma

Heliomaster, (hē-li-ō-mas'ter) [Gk. *helios*, sun] A humming-bird of Nicaragua.

Heliometer, (hē-li-om'e-ter). [Gk *helios*, sun; *metron*, measure.] A telescope adapted to the measurement of small angular distances, named from being used to measure the diameter of the sun

Heliometric method of observing transit. *v* Transit.

Heliopora, (hē-li-op'o-ra) [Gk *helios*, sun.] A round-shaped coral reef polype of indigo-blue colour.

Helioscope, (hē'li-os-kōp). [Gk. *helios*, sun; *skopeo*, I see.] An instrument for observing the sun.

Heliostat, (hē'li-ō-stat). [Gk. *helios*, sun; *statos*, fixed.] A mirror used to reflect sunlight, with machinery to move it as the sun moves, so as to keep the ray stationary.

Heliotrope, (hē'li-ō-trōp).) [Gk. *helios*, sun, *trope*, turning. 1. A plant belonging to Ehretiaceæ: also called Turnsole=Heliotropium. 2. A stone coloured green and red. also called jasper bloodstone=drops of jasper in quartz 3 An instrument for reflecting light as signals.

Heliotropic, (hē-li-ō-trō'pik). [Gk. *helios*, sun; *trope*, turning.] Bending under the influence of light.

Heliotropiceæ, (hē-li-ō-trō-pis'e-ē). [Heliotropium, *q v.*]=Ehretiaceæ, *q.v.*

Heliotropism, (hē-li-ō-trō'pizm). [Gk. *helios*, sun; *trope*, turning.] The tendency to turn towards the sun; positive in most stems of plants, negative in tendrils, root-hairs, &c.; the higher rays of light, blue, violet, and indigo, cause a less degree of growth on one side.

Heliotropium, (hē-li-ō-trō'pi-um). [Gk. *helios,* sun, *trope,* turning] Heliotrope=Turnsole: a plant belonging to Ehretiaceæ.

Helium, (hē'li-um). [Gk. *helios,* sun.] An hypothetical elementary substance present in the solar prominences.

Helix, (hē'liks). [L. *helix,* ivy.] 1.=Snail: a molluscous animal, belonging to Helicidæ, named from the spiral form of its shell: fossil remains of many species are found in Tertiary rocks. *H. pomatia.* garden snail. 2. [illegible], named from the resemblance to [illegible] of ivy.

He[illegible]rium, (hel-la-dō-thē'ri-um). [Gk. *He[illegible]* [illegible]eece; *therion,* beast.] An animal, in[illegible]ate between the giraffe and deer, [illegible] in the Miocene rock[illegible] Pikermi.

He[illegible]bore, (hel'le-bōr). [*H[illegible]boros,* the Greek name] = Helleborus = Bear's foot: a rough herb belonging to Ranunculaceæ. *Black H.* =Christmas rose. *White H.* = Veratrum album: a plant belonging to Melanthaceæ. *Red H.*=Cephalanthera rubra: a plant belonging to Orchidaceæ.

Helleborein, (hel-leb'o-rīn). [Helleborus, *q v.*] $C_{[illegible]}H_{44}O_{15}$: a glucoside found in Helleborus.

Helleborin, (hel-leb'o-rin). [Helleborus, *q.v.*] $C_{36}H_{42}O_{6}$ a glucoside found in Helleborus

Helleborine, (hel-leb'o-rin) [Helleborus, *q.v.*] =Epipactis a plant, with creeping rootstock and leafy stem, belonging to Orchidaceæ. *Common H* =Epipactis latifolia. *Marsh H* =Epipactis palustris. *White H.*=Cephalanthera grandiflora. *Red H.*=Cephalanthera rubra

He[illegible]borus, (he-[illegible]-rus). [Gk. *helein,* to [illegible]] An herb belonging to [illegible] *H. niger*=Christmas rose.

Helm [illegible] [*Helma,* the A.-S. word.]= Ru[illegible] the movable piece at the stern of a ship, by the position of which the direction of the vessel is determined.

Helmias, (hel'mi-as). [Gk. *helmins,* worm.] A sub-division of Annuloida, including Entozoa and Trematode worms.

Helminthes. (hel-min'thēz). [Gk. *helmins,* worm]= Acanthocephali: a sub-division of Vermes, *q.v.* *v.* Siebold.

Helminthia, (hel-min'thi-a). [Gk. *helminthion,* little worm.] = Ox-tongue: an herb, with milky juice, belonging to Asteraceæ: named from the worm-like form of the fruit.

Helminthiæ, (hel-min'thi-ē). [Gk. *helmins,* worms.] = Entozoa: animals belonging to Scolecida, *q.v.*

Helminthites, (hel-min'thī-tēz). [Gk. *helmins,* worm.] Worm-tracks found in hardened mud. *v.* Lithichnozoa.

Helminthoid, (hel'min-thoid). [Gk. *helmins,* worm; *eidos,* form.] Vermiform: having the external characters of worms.

Helmintholite, (hel-min'thō-līt). [Gk. *helmins,* worm; *lithos,* stone.] Fossil remains of worms.

Helminthologists, (hel-min-thol'o-jists). [Helminthology, *q.v.*] Students of helminthology.

Helminthology, (hel-min-thol'o-ji). [Gk. *helmins,* worm; *logos,* discourse.] The knowledge of the nature and habits of worms.

Helminthozoa, (hel-min-thō-zō'a). [Gk. *helmins,* worm; *zoon,* animal.]=Scolecida: a sub-division of Annuloida, including entozoa.

Helobiæ, (hel-ŏ'bi-ē). [Gk. *helos,* marsh.]= Water-plantain, &c: aquatic plants with but little, if any, endosperm.

Helodus, (hel'o-dus). [Gk. *helos,* marsh, *odous,* tooth.] A fish, known by fossil remains, found in Carboniferous rocks.

Helonias, (he-lō'ni-as). [Gk. *helos,* marsh] A plant belonging to Melanthaceæ.

Helosciadium, (he-lō-si-ā'di-um). [Gk. *helos,* marsh; *skiadeion,* shade.] = Marsh-wort: a plant belonging to Apiaceæ.

Helvellaceæ, (hel-vel-lā'se-ē). [L. *helvella,* fungus]=Ascomycetes=Morels: a division of Fungi, *q.v.*

Helvetan, (hel've-tan). A mineral belonging to the mica group.

Helvetius. Map of the moon by H.: in which the seas, &c., are named after the planets. *v.* Moon

Helvin, (hel'vin)=Tetrahedral garnet: a variety of garnet, a mineral, chiefly silicate of iron and manganese.

Helwingiaceæ, (hel-wing-i-ā'se-ē). [Helwingia, the typical genus.]=Helwingiads: shrubs, with flowers on mid-rib of leaf, belonging to Garryales

Hematein. (hē'ma-tīn). [Gk. *haima,* blood.] =Hematin: the colouring principle of logwood. Hæmatein, *q.v.*

Hematite, (hē'ma-tīt). [*Haimatites,* the Greek word] 1.=Bloodstone=Hæmatite, *q.v.* 2. =Turgite. *Black H.*=Psilomelane. *Brown H.*=Limonite.

Hemato-crystallin=Hæmato-crystallin=Hæmoglobin, *q v.*

Hemato-globulin=Hæmato-globulin=Hæmoglobin, *q.v.*

Hematoidin=Hæmatoidin, *q.v.*

Hematology, (hē-ma-tol'o-ji). [Gk. *haima,* blood; *logos,* discourse.]=Hæmatology: the science of the nature and composition of blood.

Hematosin=Hæmatin, *q.v.*

Hematoxylin=Hæmatoxylin, *q.v.*

Hemelytra, (hem-i-lī'tra). [Gk. *hemi,* half; *elytron,* sheath] The wings of some insects of Hemiptera which have one half hardened.

Hemerobius, (hem-er-ō'bi-us)=Aphis-lion: an insect, belonging to Neuroptera, the larva of which is very voracious.

Hemerocallideæ, (hem-er-ō-kal'li-de-ē). [Gk. *hemera,* day, *kallos,* beauty.]=Liliaceæ, *q.v.*

Hemi, (hem'i). [The Greek word.] A prefix, meaning half.

Hemicentetes, (hem-i-sen-tē'tēz). [Hemi, *q.v.*] =Tanrec: a hedgehog-like animal, belonging to Insectivora, common in Madagascar.

Hemicycle, (hem-i-sī'kl). (Hemi, *q.v.*; Gk. *kyklos,* circle.] Half circle; also called semicircle.

Hemicyclic flowers, (hem-i-sī'klik). [Hemicycle, *q.v.*]=Acyclic flowers: having parts of the flowers arranged in spirals.

Hemidactylus, (hem-i-dak'ti-lus). [Hemi, *q.v.*; Gk. *daktylos,* finger.]=Warty Gecko: a lizard.

Hemidome, (hem'i-dōm). [Hemi and Dome, *q v.*] In mineralogy: formed by the plane parallel to the ortho-diagonal.

Hemihedral, (hem-i-hē'dral). [Hemi, *q.v.*; Gk. *hedra*, seat.] Used of crystals having but half the normal number of planes; also generally for crystals in which some of the faces are absent.

Hemimellitic acid = $C_9H_6O_6$. *v.* Mellitic acid.

Hemimetabola, (hem-i-me-tab'o-la). [Hemi, *q.v.*; Gk. *metabole*, change.] Insects having three stages of metamorphosis, with but small differences between them: includes Hemiptera, Orthoptera, and Neuroptera. *cf.* Holometabola.

Hemimetabolic, (hem-i-me-tab'o-lik). [Gk. *hemi*, half; *metabole*, change.] Undergoing only a partial metamorphosis.

Hemimorphite, (hem-i-morf'it)=Smithsonite, *q.v.*

Hemiopsia, (hem-i-op'si-a). [Hemi, *q.v.*: Gk. *ops*, eye.]=Hemiopia: half blindness. *v.* Optic.

Hemipinic acid. $C_{10}H_{10}O_6$: a combustible crystalline substance, obtained by the combination of opianic acid and oxygen.

Hemiptera, (hem-ip'ter-a). [Gk. *hemi*, half: *pteron*, wing.] Bugs, lice, cochineal insects, &c.: insects whose anterior wings are half coriaceous. *v.* Insects.

Hemispheres, (hem'is-fērz) [Gk. *hemi*, half; *sphaira*, sphere.] *Cerebral H.*: the two lateral halves in which the brain is divided. *Magdeburg H.*: two hemispherical brass vessels made to fit together air-tight. When the air is pumped out from within, the pressure of the external air keeps the two together.

Hemitone, (hem'i-tōn). [Hemi and Tone, *q v.*] An interval in music.

Hemitrope, (hem'i-trōp). [Hemi, *q.v.*; Gk. *trope*, turning.] A half turning.

Hemlock, (hem'lok). [*Hemlcac*, the A.-S. name.]=Conium maculatum: an herb belonging to Apiaceæ. *Water H.*=Cicuta. *H. spruce fir*=Abies Canadensis

Hemp, (hemp). [*Henep*, the A.-S. word.]= =Cannabis sativa, *q.v.*: a plant the type of Cannabinaceæ. *H. agrimony*=Eupatorium, *q.v.* *H. nettle*=Galeopsis, *q v.* *H. worts*= Cannabinaceæ, *q.v.* *Manilla H.* = Musa textilis, *q.v.*

Hempstead beds, (hemp'sted). [H., in the Isle of Wight] Marine and fresh-water beds: one of the British representatives of Lower Miocene strata.

Hen, (hen). [The A.-S. word.] 1. The female of Gallus domesticus. 2. Used generally for any female bird. *H. harrier*=Falco cyaneus. *Water H.*=*Moor H.*=Gallinula chloropus. *H. weed*=Guinea-hen weed, *q.v.*

Henbane, (hen'bān). [Hen, *q.v*; A.-S. *bana*, poison.]=Hyoscyamus niger: a poisonous herb belonging to Boraginaceæ.

Hendecagon, (hen-dek'a-gon). [Gk. *hendeka*, eleven, *gonia*, angle.] A figure having eleven angles; usually a plane regular figure having eleven equal sides.

Henfrey's classification of plants.

Phanerogamia or flowering plants—
  Angiospermia—
    Dicotyledons.
    Monocotyledons.
  Gymnospermia—
Cryptogamia or flowerless plants—
    Angiosporæ.
    Gymnosporæ.

Henle, tubes of. In the kidney: named after the discoverer.

Henley's electrometer=Quadrant electrometer, *q.v.*

Henna, (hen'na). [*Hinna*, the Arabic name.] =Lawsonia spinosa: from the leaves of which a paste is made, used for colouring the finger nails, &c.

Hensloviaceæ, (hen-slō-vi-ā'se-ē). [Henslovia, the only genus, named after Professor Henslow.] East Indian trees resembling Myrobalans.

Hepatic, (he-pat'ik). [Gk. *hepar*, liver.] Belonging to or connected with the liver. *H. artery*: which conveys blood from the heart to the liver. *H. vein*: conveys blood from the liver to the heart by way of the vena cava inferior. *H. duct*: conveys the gall from the liver.

Hepaticæ, (he-pat'i-sē). [Gk. *hepar*, liver.] =Liver-worts: mosses, the leaves of which are merely plates of cells. *v.* Mosses.

Hepatite, (hep'a-tit). A variety of Barite or Baryta.

Heptagon, (hep'ta-gon). [Gk. *hepta*, seven; *gonia*, corner.] A figure with seven angles: usually a regular plane figure with seven equal sides.

Heptagon.

Heptane, (hep'tān). [Heptylene, *q.v.*] C_7H_{16}=Septane= Heptyl hydride: a hydrocarbon.

Heptine, (hep'tin). [Heptylene, *q.v.*] C_7H_{14} =Septine, *q v.*

Heptyl, (hep'til). [Heptylic, *q.v.*] The radicle of the heptylic series. *H. alcohol*=Œnanthyl alcohol=$C_7H_{16}O$. *H. hydride*=Heptane= C_7H_{16}.

Heptylamine, (hep-til'a-min). [Heptyl and Amine, *q.v.*] $C_7H_{17}N$: ammonia in which one equivalent of H is replaced by one of heptyl.

Heptylene, (hep'ti-lēn). [Gk. *hepta*, seven: from the seven equivalents of carbon.]= C_7H_{14}=Œnanthylene: a hydrocarbon of the olefine series.

Heptylic acid, (hep'ti-lik). [Heptylene, *q.v.*] $C_7H_{14}O_2$=Œnanthylic acid, *q.v.*

Heracleum, (he-rak'le-um). [Heracleon, a plant sacred to Hercules.]=Cow parsnip, hog-weed, &c.: a large herb belonging to Apiaceæ.

Herald-moth=Gonopteryx libatrix: named from heralding winter.

Herb, (erb). [*Herba*, the Latin word.] A plant of small size, usually an annual. *v.* Plants. *H. Bennett*=Geum, *q.v.* *H. Christopher*=Actæa spicata: an herb belonging to Ranunculaceæ. *H. du diable*=Plumbago scandens. *H. Gerard*=Ægopodium podagaria: a plant belonging to Apiaceæ. *H.*

Paris=Paris, a plant belonging to Liliaceæ. *H Robert*=Geranium Robertianum.
Herbivora, (hėr-biv'ō-ra). [Herb, *q.v.*; L. *voro*, I eat]=Herbivorous animals: a subdivision of Mammalia; including all mammalian animals which live exclusively on vegetable food.
Hercules, (hėr'kū-lēz). [Classical.] One of the Northern Constellations.
Herculis, (hėr'kū-lis) [Hercules, *q.v.*]=Of Hercules: used of stars belonging to that constellation.
Hercynite, (hėr'si-nīt). [Hercynia.] A mineral. chiefly oxide of aluminum and iron.
Herderite, (hėr'dėr-it). [Baron Herder.] A rare mineral: chiefly phosphate of aluminum, calcium, &c.
Heredity, (he-red'i-ti). [L. *hereditas*, inheritance.] Reversion to ancestral types; the law of reproduction that like produces like.
Herepath's salt. Sulphate of iodoquinine: named after Dr. Herapath.
Hereus: in moon.
Hermann's classification of plants: according the nature of the fruit. *v.* Botanical systems.
Hermanniaceæ, (her-man-ni-ā'se-ē). [Herr Hermann.] Now included in Byttneriaceæ, *q.v.*
Hermaphrodite, (hėr-maf'rō-dīt). [Gk. *hermes*, Mercury; *aphrodite*, Venus.]=Bisexual: having the two sexes united in one individual. *H. exogens*, divided into polypetalous and monopetalous.
Hermaphrodites. 1. Self-generating, as tapeworms, bryozoa, ascidians, &c. 2. Mutually generating, as leeches, slugs, snails, &c.
Hermaphroditism, (hėr-maf'rō-dit-izm). [Hermaphrodite, *q.v.*] Union of sexes in the same animal or plant.
Hermetic, (hėr-met'ik). [Gk. *hermes*, Mercury: as the inventor of chemistry.] 1. Relating to chemistry. 2. Close, air-tight. *H. barometer*: a tube filled with air and spirits of wine.
Hermetics, (hėr-met'iks). [Hermetic, *q.v.*]=Alchemy: an old name for chemistry.
Herminium, (hėr-min'i-um). [Gk. *hermin*, bed-post.]=Musk orchis: a plant belonging to Orchidaceæ; named from the shape of its tubers.
Hermit, (hėr'mit). *H. crab*=Soldier crab=Pagurus Bernhardus. *H. crabs*=Paguridæ, *q.v.* *H. birds*=Phaethornis: a species of humming birds. *Little H.*=Phaethornis eremita: a small humming bird.
Hernandia, (hėr-nan'di-a). [Senor Hernandez.] A plant with large leaves and small flowers: the type of Hernandiaceæ.
Hernandiaceæ, (hėr-nan-di-ā'se-ē). [Hernandia, *q.v.*]=Thymelaceæ, *q.v.*
Hernia, (hėr'ni-a). [The Latin word.]=Rupture, *q.v.*
Herniaria, (hėr-ni-ā'ri-a). [*Hernia*, a rupture.]=Rupture-wort: an herb belonging to Paronychiaceæ.
Hernshaw, (hėrn'shaw)=Heron, *q.v.*
Hero's fountain. An apparatus invented by Hero of Alexandria, in which water is driven out of a fine tube by the pressure of air upon water, in which the lower end is immersed.
Herodotus, (hē-rod'o-tus). [Classical.] A crater in the moon.
Héron, (her'on). [The French name.]=Ardea cinerea: a wading bird, belonging to Grallatores. *Night H.*=Nycticorax. *H.'s bill*=Erodium, *q.v.*


Heron.

Herons, (her'onz). [Heron, *q.v.*]=Ardeidæ: a family of birds belonging to Grallatores.
Herpestes, (hėr-pes'tēz). Gk. *herpestes*, creeping.] Ichneumon, &c: a carnivorous animal, belonging to Viverridæ: found in S. Africa and India only.
Herpestis, (hėr-pes'tis). [Gk *herpestes*, creeping.] A plant belonging to Scrophulariaceæ.
Herpetology, (hėr-pet-ol'o-ji). [Gk. *herpeton*, reptile; *logos*, discourse] The natural history of reptiles; the science of their nature and habits.
Herpetotomist, (hėr-pe-tot'ō-mist). [Herpetotomy, *q v.*] A student of the anatomy of reptiles.
Herpetichnus, (hėr-pe-tik'nus). [Gk. *herpeton*, reptile; *ichnos*, track.] A reptile, known only by fossil traces of footsteps in Trias rocks.
Herpetotomy, (hėr-pet-ot'ō-mi). [Gk. *herpeton*, reptile, *tome*, section.] Anatomy of reptiles; a branch of Zootomy.
Herring, (her'ring). [*Hæring*, the A.-S. name.]=Clupea harengus: a fish, the type of Clupeidæ.
Herrings, (her'ingz). [Herring, *q.v.*]=Clupeidæ: a family of fishes belonging to Malacopteri.
Herschel, (hėr'shel). 1. A crater in the moon, 17 miles in diameter. 2.=Georgium Sidus=Uranus: named after its discoverer, Sir John Herschel.
Herschelian, (hėr-shē'li-an). [Sir John Herschel.] *H. rays:* the non-luminous rays beyond the red end of the spectrum. *H. telescope:* a reflecting telescope, in which the image is formed by reflection to an eye-piece at one side.
Herschelite, (hėr'she-līt). [Sir John Herschel.] A translucent mineral, chiefly hydrated silicate of aluminum, natrium, kalium, calcium, &c.
Hesperia, (hes-pē'ri-a). [Classical.] No. 68 of the Minor Planets, *q.v.*
Hesperidæ, (hes-per'i-dē). [Gk. *hesperos*, evening.] 1. A family of butterflies, also called Skippers, of small size and rapid motion. 2.=Citrus, &c.: a family of plants belonging to Aurantiaceæ.
Hesperidene, (hes-per'i-dēn). [Hesperidæ, 2, *q.v.*]=Terene of orange oil.
Hesperidin, (hes-per'i-din). [Hesperidæ, *q.v.*] A crystalline substance obtained from peel of orange, lemon, &c.

Hesperis, (hes'pęr-is). [The Greek name.] Dame's violet: an herb, with showy flowers, belonging to Brassicaceæ.

Hesperornis, (hes-pęr-or'nis). [Gk. *hesperos*, evening; *ornis*, bird.] A wading bird, of which fossil remains are found in Cretaceous rocks.

Hesselbach's triangle. A triangular space in the wall of the abdomen: named after the discoverer.

Hessenbergite, (hes'sen-bęr-gīt). [Herr Hessenberg.] A transparent mineral, chiefly silicates.

Hessian fly, (hes'shi-an). [Hessian.]=Cecidomyia: an insect belonging to Diptera.

Hessite, (hes'sīt). A grey mineral, chiefly tellurium and silver; also called Telluric silver.

Hessonite, (hes'so-nīt)=Cinnamon stone: a variety of garnet.

Hestia, (hes'ti-a). [Classical.] No. 46 of the Minor Planets.

Hetairism, (het-ā'i-rizm). [Gk. *hetaireia*, fellowship.]=Communal marriage.

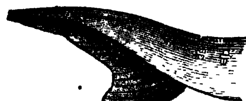
Heterangium, (het-er-an'ji-um). A fern, known by fossil stem.

Hetero, (het'er-ō) [Gk. *heteros*, different.] A prefix, implying difference.

Heterobranchia, (het-er-ō-brang'ki-a) [Hetero, *q.v.*; Gk. *brangchion*, gill.]=Ascidians, &c.: a division of acephalous mollusca. Used by De Blainville for a sub-division of Acephalophora; and by Leuckart for a division of Gasteropoda; also by Lamarck for a division of Crustaceæ.

Heterocercal, (het-er-ō-sęr'kal). [Hetero, *q.v.*; Gk. *kerkos*, tail.] With unsymmetrical tails, having the vertebral column continued into the larger of two unequal lobes; rare now; universal in fossil fishes of primary rocks. *cf.* Homocercal.

Heterocercy, (het-er-ō-sęr'si) [Hetero, *q.v.* Gk. *kerkos*, tail.] Inequality in the lobes of the tail. *cf.* Homocercy.



Heterocercal tail.

Heterocline, (het'er-ō-klīn). [A mineral, chiefly silicate of manganese.

Heteroclite, (het'er-ō-klīt). [Hetero, *q.v.*; Gk. *klinein*, to bend.] Anomalous: used by Cuvier for the structure of sloths and other animals, departing from the primitive type.

Heterodon, (het'er-ō-don). [Hetero, *q.v.*; Gk. *odous*, tooth.] 1. A serpent belonging to Coluber. *H. nigricans*=Black pig-nosed serpent. 2. A plant belonging to Bruniaceæ.

Heterodonts, (het'er-ō-dontz). [Hetero, *q.v.*; Gk. *odous*, tooth.]=Diphyodonts, *q.v.*

Heterœcism, (het'er-ē-sizm). [Hetero, *q.v.*; Gk. *oikos*, house.] Different stages of development in species, used especially of fungi.

Heterogangliate, (het-er-ō-gang'gli-āt). [Hetero, *q.v.*; Gk. *ganglion*, kind.] Having the ganglia of the nervous system unsymmetrically arranged.

Heterogangliata, (het-er-o-gang'li-at-a). [Hetero, *q.v.*; Gk. *ganglion*, tumor.] Owen's term for the *Mollusca* of Cuvier.

Heterogeneous, (het-er-ō-jē'ne-us). [Hetero, *q.v.*; Gk. *gennao*, I produce.] Differing in kind. *v.* Heterogenesis.

Heterogenesis, (het-er-ō-jen'e-sis). [Hetero and Genesis, *q.v.*] = Xenogenesis: an allotropic modification of existing living matter, so that the offspring is unlike the parent= Agamogenesis interrupted by gamogenesis, being occasionally varied by sexual genesis= Cyclical recurrence of the same form. Also used for spontaneous generation.

Heterogenetic, (het-er-ō-jen-et'ik). [Heterogenesis, *q.v.*]=Heterogeneous, *q.v.*

Heterogenite, (het-er-ō'jen-īt). A mineral, chiefly hydrated oxide of cobalt.

Heterologous, (het-er-ol'o-gus). [Hetero, *q.v.*; Gk. *logos*, discourse.] Constructed on a different plan; not having the same distribution of parts or organs. *cf.* Homologous.

Heteromera, (het-er-om'er-a). [Hetero, *q.v.*; Gk. *mera*, thigh-bones.] A primary division of beetles, named from an apparent difference in the number of joints in the tarsi of the first and second pairs of legs.

Heteromorpha, (het-er-ō-mor'fa). [Hetero, *q.v.*; Gk. *morphe*, form.] 1. A genus of plants belonging to Apiaceæ. 2. Insects, of which the larvæ are worm-like and soft, and the offspring have no resemblance to the parents. 3. De Blainville's term for sponges, infusoria, and coral polyps.

Heteromorphite, (het-er-ō-morf'īt). [Hetero, *q.v.*, *morphe*, form.]=Feather ore: a mineral, chiefly antimoniate of lead.

Heteronemeæ, (het-er-on-em'e-ē). [Hetero, *q.v*; Gk *nema*, thread.] Ferns and mosses: used by Fries for Acrogens. *v.* Fries' classification.

Heteronemeous, (het-er-on-em'e-us). Bartling's term for mosses. *v.* Bartling's classification.

Heteropathy, (het-er-op'a-thi). [Hetero, *q.v.*; Gk. *pathos*, suffering.] *v.* Medical science. *cf* Homœopathy.

Heterophagi, (het-er-of'a-ji). [Gk. *heteros*, different; *phago*, I eat.] Used for birds who feed their young, as distinguished from those whose young are able to feed themselves.

Heteropoda, (het-er-op'o-da). [Hetero, *q.v.*; Gk. *pous*, foot.] 1.=Nucleobranchiata: a group of animals, belonging to Gasteropoda, divided into *Firolidæ* and *Atlantidæ*; found fossil from lowest Silurian rocks until now. 2. De Blainville's term for Entomostraca, Squilla, and Epizoa.

Heteroptera, (het-er-op'tęr-a). [Hetero, *q.v.*; Gk. *pteron*, wing.] A sub-division of Hemiptera, having the anterior wings half of membrane, half chitinous; divided into Aurocorisa and Hydrocorisa. *cf.* Homoptera.

Heterorgana, (het-er-or'gana). [Hetero, *q.v.*; Gk. *organon*, organ.]=Vascular plants, *q.v.*

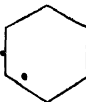
Heteroscii, (het-er-os'si-ī). [Hetero, *q.v.*; Gk.

skia, shadow] Persons living north or south of the tropics, so that the shadow from the sun is always on the same side.

Hexactinellidæ, (heks-ak-tin-el'i-dē). [Gk. *hex*, six; *aktis*, ray.] A name used by Schmidt for the family of siliceous sponges, of which Porifera vitrea is the type, found at the bottom of N. Atlantic.

Hexads, (heks'adz). [Gk. *hex*, six.]=Hexatomic elements, equivalent to 6 atoms of hydrogen: includes molybdenum, tungsten, &c.

Hexagon, (heks'a-gon). [Gk. *hex*, six; *gonia*, angle.] A plane figure formed by six sides; properly, a regular plane figure formed by six equal sides.


Hexagon.

Hexagynia, (heks-a-jin'i-a). [Gk. *hex*, six: *gyne*, woman.] A sub-division in the Linnean classification of plants, *q v.*

Hexahedron, (heks-a-hē'dron). [Gk. *hex*, six; *hedra*, base.]=Cube: a solid figure formed by six equal and similar sides.

Hexandria, (heks-an'dri-a). [Gk. *hex*, six; *aner*, man.] A sub-division in the Linnean classification of plants, *q v.*

Hexane, (heks'ān). [Gk. *hex*, six.] C_6H_{14}= Sextane: a hydrocarbon, named from having six equivalents of carbon. *v.* Hydrocarbons.

Hexapoda, (heks-ap'o-da). [Gk. *hex*, six; *pous*, foot.] De Blainville's term for insects, which have six feet.

Hexapodous, (heks-ap'o-dus). [Hexapoda, *q.v.*] Having six feet.

Hexapodichnus, (heks-a-po-dik'nus). [Gk. *hex*, six; *pous*, foot; *ichnos*, track.] An invertebrate animal, probably crustacean, known only by its fossil track. *v.* Lithichnozoa.

Hexaprotodon, (heks-a-prō'to-don). [Gk. *hex*, six; *protos*, first or front; *odous*, tooth.] A pachydermatous quadruped, known by fossil remains: has six front teeth.

Hexine, (heks'īn). [Hexane, *q.v.*] C_6H_{10}= Sextine=Hexoylene. *v.* Hydrocarbons.

Hexyl, (heks'il). [Hexane, *q.v.*; Gk. *hyle*, material.]=$(C_6H_{13})_2$=Caproyl: an aromatic oily liquid; a hydrocarbon radicle. *H. alcohol* $-C_6H_{14}O$. *H. hydride*=C_6H_{14}.

Hexylene, (heks'i-lēn). [Hexyl, *q.v.*]=Caproylene, *q.v.*=C_6H_{12}: a liquid hydrocarbon of the olefine series. *v.* Hydrocarbons.

Hiarree. [The native name.] The narcotic roots of a Guiana shrub, which when thrown into water stupify any fish that are therein.

Hiatus Fallopii, (hi-ā'tus fal-lō'pi-ī). [The Latin name.] A groove in the temporal bone. Named after Signor Fallopius.

Hibiscus, (hi-bis'kus). [*Hibiskos*, the Greek name.] Marsh mallow: a plant belonging to Malvaceæ. *H. rosa-chinensis*=China rose. *H. abelmoschus*=Abelmoschus, *q v.*

Hibou, (e-bō). [The French name.] An owl: a bird belonging to Strigidæ.

Hiccoughing. Convulsive inspiration caused by spasmodic contractions of the diaphragm.

Hickory, (hik'o-ri) = Carya = Juglans alba= White walnut: an American tree belonging to Juglandaceæ.

Hielmite, (hi-el'mīt). A mineral, chiefly stanno-tantalate of iron, uranium, and yttrium.

Hieracium, (hī-er-ā'si-um). [Gk. *hierax*, a Hawk.]=Hawkweed: an herb, with milky juice and yellow flowers, belonging to Asteraceæ. *H. aurantiaceum* = Golden mouse-ear.

Hiero's Fountain=Hero's fountain, *q.v.*

Hierochloe, (hī-ro-klō'e). [Gk *hieros*, sacred; *chloa*, grass.]=Holy grass: a plant belonging to Graminaceæ.

Hierofalco, (hī-er-o-fal'kō). [Gk. *hieros*, sacred; Falco, *q v.*]=Gerfalcon, *q.v.*

Hieroglyphic (hī-er-ō-glif'ik). [Gk. *hieros*, sacred; *glyphe*, carving.] Sculpture-writing: any system of representation by carved figures.

Highgate resin=Copalite, *q v.*

Highmore's cave=Antrum of Highmore: a cavity in the upper maxillary bone, named after the discoverer.

Highton's battery, (hī'ton). [Mr. Highton.] A galvanic battery, consisting of zinc in sulphuric acid, common salt, or caustic potash, and carbon in peroxide of manganese.

Hill, (hil). [The A.-S. word.] *H. ant*=Horse ant=Wood ant=Formica rufa: named from the shape of the nest. *H. pine*=Pinus sinensis, of China. *H. fox*=Canis Himalaicus of India.

Hilobates. [The Latin name.]=Gibbon, *q v.*

Hilton's muscle. In the larynx, named after the discoverer.

Hilum, (hī'lum). [The Latin word.] The scar of the attachment of the seed to the placenta. Generally, any small aperture or depression.

Hilus, (hī'lus). [The Latin word.] The concave side of the kidney. Generally, any small concavity.

Himalayan, (him-a-lā'an). [Himalaya Mountains] *H. creeper*=Certhia Himalaya. *H. fox*=Canis Himalaicus. *H. partridge*=Tetraogallus Himalayensis. *H. rabbit*=Chinese rabbit=Albino rabbit.

Himantopus, (hī-man'to-pus)=Longshanks: a wading bird.

Hindoo, (hin'dō)=Hindu: relating to Hindostan.

Hinnites, (hin'nīts). Fossil shells, found in Crag.

Hinny, (hin'ni). [*Hinnus*, the Latin word.] Offspring of stallion and female ass.

Hip, (hip). [*Hype*, the A.-S. word.] 1. The joint of the leg and trunk. 2. The ridge of a roof formed by two sloping sides.

Hipparin, (hip'pa-rin). [Hippuric, *q.v.*] $C_8H_9NO_2$: a crystalline substance obtained from hippuric acid.

Hipparion, (hip-pā'ri-on). [Gk. *hippos*, horse.] A horse-like animal, known by fossil remains in Pliocene rocks; intermediate between the horse and tapir.

Hipparchus, (hip-pār'kus). In moon, *q.v.*

Hippariffan, (hip-par'a-fin). [*Hip*puric and *Paraffin*.] C_8H_7NO: a crystalline substance, obtained from hippuric acid.

Hippobosca, (hip-po-bos'ka). [Gk. *hippos*,

horse; *bosko*, I feed.]=Forest-fly=Horse-fly: the type of Hippoboscidæ, *q.v.*

Hippoboscidæ, (hip-po-bos'i-de). [Hippobosca, *q.v.*; Gk. *eidos*, form.] A family of insects, belonging to Diptera, living on horses, sheep, and other quadrupeds, and on birds.

Hippocampal, (hip-pō-kam'pal). [Hippocampus, *q.v.*] *H. commissure*, in brain; in reptiles, at its lowest stage.

Hippocampidæ, (hip-pō-kam'pi-dē). [Hippocampus, *q.v.*]=Sea-horses: fishes, belonging to Syngnathidæ, having a marsupial pouch, for the eggs, in males only, and long flexible prehensile tails: named from the resemblance to a horse's head.

Hippocampus, (hip-pō-kam'pus). [Gk. *hippos*, horse; *kamptos*, bent.] 1.= Horse-fish: a small fish, the type of Hippocampidæ, *q.v.* 2. A white eminence in the brain. *H. major:* a projection of the posterior cornu of the cerebrum, continuous with the corpus callosum. *H. minor:* a projection of the descending cornu of the cerebrum, continuous with the corpus callosum.

Hippocastaneæ, (hip-pō-kas-tā'ne-ē). [Hippocastaneum, *q.v.*]=Sapindaceæ, *q.v.*

Hippocastaneum, (hip-pō-kas-tā'ne-um). [Gk. *hippos*, horse.] = Horse-chestnut=Aesculus hippocastanum, *q.v.*

Hippocrateaceæ, (hip-pō-krat-e-ā'se-ē). Hippocrates.]=Hippocrateads: shrubs, with opposite leaves and polypetalous flowers, belonging to Rhamnales.

Hippocrepian, (hip-pō-krē'pi-an). [Gk. *hippos*, horse; *krepis*, shoe.] Horse-shoe shaped. *H. polyzoa* = Those having a horse-shoe shaped lophophore=Phylactolæmata.

Hippocrepis, (hip-pō-krē'pis). [Gk. *hippos*, a horse; *krepis*, a shoe.]=Horse-shoe vetch: an herb, with yellow flowers, belonging to Leguminaceæ, named from form of legume.

Hippoglossus, (hip-pō-glos'sus). [Gk. *hippos*, horse; *glossa*, tongue.] = Halibut = Pleuronectes hippoglossus: a large flounder-like fish.

Hippomane, (hip-pō-mā'ne). A plant belonging to Euphorbiaceæ. *H. mancinella* = Manchineel tree.

Hippophaë, (hip-pof'a-e). [Gk. *hippos*, horse; *phao*, I shine.]=Sea buckthorn: a silvery shrub, belonging to Elæagnaceæ.

Hippopodium, (hip-pō-pō'di-um). [Gk. *hippos*, horse; *pous*, foot.] A large heavy shell, found in Lower Lias rocks.

Hippopotamidæ, (hip-pō-pot-am'i-dē). [Hippopotamus, *q.v.*; Gk. *eidos*, form.] A family of animals, of which Hippopotamus is the only genus.

Hippopotamus, (hip-pō-pot'a-mus). [Gk. *hippos*, horse; *potamos*, of a river.] A hoofed pachydermatous quadruped, living near rivers, having obtuse truncated foreteeth. Fossil in Pliocene.



Hippopotamus.

Hippotherium, (hip-pō-thē'ri-um). [Gk. *hippos*, horse; *therion*, beast.] A horse-like animal, known by fossil remains found in Miocene rocks.

Hippotomy, (hip-pō-pot'o-mi). [Gk. *hippos*, horse; *tome*, section.]=Anatomy of horses. *v.* Zootomy.

Hippurates, (hip-pū'rats). [Hippuric, *q.v.*] Compounds of hippuric acid with bases: hippuric acid in which one equivalent of hydrogen is replaced by one of a base.

Hippuric acid, (hip-pū'rik). [Gk. *hippos*, horse; *ouron*, urine] $=C_9H_9NO_3$= Benzoyl glycocine; a crystalline acid substance found in the urine of horses, cows, &c.

Hippurideæ, (hip-pū-rid'e-ē). [Hippuris, *q.v.*; Gk. *eidos*, form.]=Hippurids=Haloragaceæ, *q.v.*

Hippuris, (hip-pū'ris). [Gk. *hippos*, horse; *oura*, tail.]=Mare's tail: an aquatic herb, with small flowers, belonging to Haloragaceæ.

Hippurite, (hip-pū'rīt). [Hippuris, *q.v.*] Lamellibranchiata, peculiar to Upper Cretaceans.

Hippurite. *H. limestone:* belongs to Upper Cretaceous formation; distinguished by the presence of Hippurites and other Rudistes.

Hippurites, (hip-pū'ri-tēz). [Hippuris, *q.v.*] 1. Marsh plants, known by fossil remains found in Lias rocks. 2. A mollusc belonging to Lamellibranchiata fossil in Cretaceous rocks only.

Hircic acid, (hẹr'sik). [Hircus, *q.v.*] An acid obtained from goat's fat.

Hircin, (hẹr'sin). [Hircus, *q.v.*] A principle found in goat's fat.

Hircite, (hẹr'sīt). [Hircus, *q.v.*] A mineral, chiefly an amorphous acid hydrocarbon, named from its odour.

Hircus, (hẹr'kus). [The Latin name.]=Capra hircus=Goat, *q.v.*

Hirudinea, (hi-rū-din'e-a). [L. *Hirudo*, leech.] =Leeches: aquatic, vermiform animals, belonging to Annelida, also called *Discophora* and *Suctoria*.

Hirundinidæ, (hi-run-din'i-dē). [Hirundo, *q.v.*] A family of birds, belonging to Insessores.

Hirundo, (hi-run'dō). [The Latin name.]= Swallow: a swiftly-flying, migratory, insectivorous bird, having a sharp pointed beak and long wings; found in watery places; belongs to Passeres. *H. rustica*=Swallow. *H. urbica*=Martin.

Hisingerite, (his-in'jẹr-īt). [Hisinger, a Swedish chemist.] A mineral, chiefly hydrated silicate of iron, very hygroscopic.

Hislopite, (his'lō-pīt). A compound of calcite and glauconite, also called green limestone.

Histioderma, (his-ti-ō-dẹr'ma). [Gk. *histion*, sail; *derma*, skin.] Small annelidoid burrows in Schistose rocks.

Histionotus, (his-ti-ō-nō'tus). [Gk. *histion*, sail; *notos*, back.] A fresh-water fish, known by fossil remains found in Pleistocene rocks.

Histiophorus, (his-ti-of'o-rus). [Gk. *histion*, sail; *phero*, I bear.] A sword-fish.

Histological, (his-to-loj'i-kal). [Histology, *q.v.*] Referring to or connected with histology.

Histology, (his-tol'ō-ji). [Gk. *histos*, web;

logos, discourse.] The anatomy of the ultimate structure of the tissues of the body; resulting from the application of the microscope to anatomy.

Hitchcockite, (hich'kok-īt). [Mr. Hitchcock.] =Plumbogummite: a mineral, chiefly hydrated aluminate of lead.

Hive, (hīv). [*Hyfe*, the A.-S. word.] *H. bee* =Apis mellifica: an insect, belonging to Hymenoptera. *H. beetle*=Clerus apiarius: the larva is parasitic on bees. *Bee H*: 1. of Hive-bee: in hexagonal prisms; 2. of Humble-bee: old cocoons, with added tubes or cells, 3. of Melipona domestica, of Mexico, of truncated spherical cells.

Hoar frost, (hōr). [A.-S. *hâr*, white.]=Frozen dew.

Hoazin, (hō-ā'zin)=Opisthocomus cristatus: a bird belonging to Cracidæ.

Hobby, (hob'bi). [*Hobereau*, the French word.]=Falco subbuteo: a bird belonging to Falconidæ.

Hodograph, (hod'o-graf). [Gk. *hodos*, road; *grapho*, I write.] A construction for showing the velocity and acceleration of the motion of a particle. The H. of the motion of a planet is a circle.

Hoernesite, (hō-er'ne-sīt). [Dr. Hoernes.] A white mineral, chiefly hydrated arsenate of magnesium.

Hoevelite=Sylvite.

Hœven's classification of animals.

- Infusories.
- Polyps=Polypi.
- Sea-nettles.
- Echinoderms=Echinodermata.
- Intestinal worms=Entozoa.
- Wheel-animalcules=Rotatoria.
- Ringed-worms=Annulata.
- Insects=Insecta.
- Arachnids=Arachnoidea.
- Crustaceans=Crustacea.
- Tunicates.
- Bivalves=Conchifera.
- Molluscs=Mollusca.
- Fishes.
- Reptiles.
- Birds.
- Mammalia.

Hog, (hog). [*Hwch*, the Celtic word.]=Sus: an omnivorous quadruped, the type of Suidæ, *q.v.* *Ground H.*=Orycteropus capensis. *H. deer*=Hyelaphus porcinus; also=Cervus porcinus. *H. gum-tree*=Moronobea coccinea. *H. meat*=Roots of Boerhaavia decumbens. *H. plum*=Fruit of Spondias. *H. weed*= Boerhaavia; also=Heracleum. *H.'s fennel*= Peucedanum.

Hogging-strain: in shipbuilding; tends to break a ship in half across the deck, when the centre is not strong enough to support the weight of the ends. *cf.* Sagging.

Hogshead, (hogz'hed). [G. *okshoofd*, ox-head.] A large cask.
H. of wine=63 gallons } more or less obsolete.
H. of beer=54 ,, }

Holconoti, (hol-kō-nō'ti). [Gk. *holkos*, furrow; *notos*, back.] Fishes having marsupial pouches.

Holcus, (hol'kus). [Gk. *helko*, I extract.] A plant belonging to Gramineæ. *H. mollis* =Soft grass. *H. saccharatus* = Cane. *H. sorghum*=Millet.

Holibut, (hol'i-but)=Pleuronectes hippoglossus=Hippoglossus vulgaris=Halibut, *q.v.*

Holland, (hol'land). A variety of linen, *q.v.*, named from being first made in Holland.

Hollands, (hol'landz)=Geneva: a corn spirit, named from being made in Holland.

Hollow, (hol'lō). [*Hol*, the A.-S. word.] Not solid: excavated. *H.-horned ruminants*: oxen, sheep, goats, antelopes, &c.

Holly, (hol'li). [*Holeyn*, the A.-S. name.]= Ilex aquifolium: a plant belonging to Aquifoliaceæ. *Sea H.* =Eryngium maritimum.

Holly.

Holly-bush sandstone. Rocks at Malvern: corresponding to Lingula Flags.

Holly-hock,(hol'li-hok). [*Holihoc*, the A.-S. name.]=Althea rosea, *q.v.*

Holly-worts, (hol'li-wurtz). [Holly and Wort, *q.v.*]=Aquifoliaceæ, *q.v.*

Holocentrum, (hol-ō-sen'trum). [Gk. *holos*, whole; *kentron*, spine.] A fish belonging to Percidæ.

Holocephali, (hol-ō-sef'a-li). [Gk. *holos*,whole; *kephale*, head.] A sub-division of fishes, formed by Siebold, including chimæra, *q.v.*, and several fossil forms, also used as=Elasmobranchii.

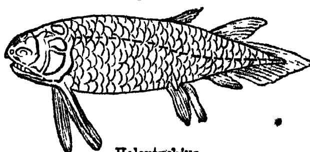
Holohedral, (hol-ō-hē'dral). [Gk. *holos*, whole; *hedra*, base.] Whole-sided crystals: having the greatest possible degree of symmetry.

Holometabola, (hol-ō-me-tab'o-la). [Gk. *holos*, whole; *metabole*, change.] Beetles, butterflies, moths, &c.: insects with three greatly differing stages of metamorphosis: 1. vermiform larva; 2. dormant pupa; 3. perfect insect. *v.* Insect-life.

Holometabolic, (hol-ō-me-tab'o-lik). [Holometabola, *q.v.*] Undergoing complete metamorphosis.

Holophotal, (hol-of'ō-tal). [Gk. *holos*, whole; *phos*, light.] *v.* Pharology.

Holoptychidæ, (hol-op-tik'i-dē). [Holoptychius, *q.v.*] A family of fishes belonging to Ganoidei, known by fossil remains.



Holoptychius.

Holoptychius, (hol-op-tik'i-us). [Gk. *holos*, whole; *ptyche*, wrinkle.] A fish, known chiefly by scales, fossil remains of which are found in Old Red Sandstone.

Holostei, (hol-os'te-ī). [Gk. *holos*, whole;

osteon, bone.] Used by Siebold for a subdivision of fishes.

Holosteum, (hol-os'te-um). [Gk. *holos*, all; *osteon*, bone.] Chickweed: a plant belonging to Caryophyllaceæ.

Holostomata, (hol-os-tom'a-ta). [Gk. *holos*, whole; *stoma*, mouth.]=Phytophagous Gasteropoda: which have the aperture entire; numerous in Palæozoic rocks. *cf.* Siphonostomata.

Holostomatous, (hol-os-tom'a-tus). [Holostomata, *q.v.*] Having the aperture entire.

Holothuria, (hol-ō-thō'ri-a) [*Holothourion*, the Greek name.]=Sea-cucumber: a division of Echinodermata.

Holothuriadea = Holothuridea, *q v.*

Holothuroidea, (hol-ō-thō-roid'e-a). [Holothuria, *q.v.;* Gk. *eidos*, form.]=Holothuriadæ =Sea-slugs, &c.: the most highly organised division of Echinodermata, with vermiform bodies.

Holothuridæ, (hol-ō-thō'ri-dē). [Holothuria, *q v.*; Gk. *eidos*, form.]=Sea cucumbers: have soft and leathery vermiform bodies; with suckers, but no spines; are intermediate between the globular echinus and annulose fistularia.

Holtenia, (hōl-tē'ni-a). [M. Holten, Faroe Isls.] A vitreous sponge, discovered in 1868. *H. Carpenteri*=Sea-nest: a siliceous nest-shaped sponge found at the bottom of N. Atlantic.

Holtz's electrical machine. For the collection of electricity on a large scale by means of induction.

Holy, (hō'li). *H. grass*=Hierochloë.

Homaliaceæ, (hom-al-i-ā'se-ē). [Gk. *homalos*, regular.]=Homaliads: shrubs and trees, with alternate leaves and small flowers, belonging to Cactales.

Homalodontotherium, (hom-a-lō-don-tō-thē'ri-um). [Gk. *homalos*, regular, *odous*, tooth; *therion*, beast] *H. Cunninghami*: a mammalian animal, known only by fossil remains (teeth and fragments of bone), found in Patagonia; connects Perissodactyles with Nesodon.

Homalonotus, (hom-a-lo-nō'tus). [Gk. *homalos*, regular; *notos*, back.] A trilobite, found in Silurian and Devonian rocks: having the division into three lobes very slightly marked.

Homaloptera, (hom-a-lop'ter-a). [Gk. *homalos*, regular; *pteron*, wing.] A name suggested for Thoracocephala.

Homarus, (hō'ma-rus). [The Latin name.]= Lobster: a crustacean animal.

Homberg's phosphorus. Chloride of calcium.

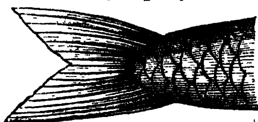
Hominidæ, (hō-min'i-dē). [Homo, *q.v*; Gk. *eidos*, form.] A family of Anthropoidea of which Homo (=Man) is the only genus.

Homo, (ho'mō). [Gk. *homos*, like.] A prefix implying likeness or equality.

Homo, (hō'mō). [The Latin name.]=Man= Human beings: diurnal animals, belonging to Primates, erect, with naked body; a family of Mammalia having but one genus and one species. *H. sapiens*=White men. *H. Afer* =Dark.

Homo diluvii testis, (hō'mō di-lū'vi-ī tēs'tis). [Latin.] The name given to the fossil skeleton of a large salamander found in Miocene rocks, on the supposition that it was a human skeleton.

Homocercal, (hō-mō-ser'kal). [Gk. *homos*, equal; *kerkos*, tail.] Equally lobed fish-tails,



Homocercal tail.

rare in fossil fishes of primary strata, almost universal now. *cf.* Heterocercal.

Homocercy, (hō-mō-ser'si). [Homocercal, *q.v.*] Equality in the lobes of the tail: used especially of fishes. *cf.* Heterocercy.

Homœopathy, (hōm-ē-op'a-thi). [Gk. *homoios*, similar, *pathos*, feeling.] The system of medical treatment which is based on the theory that is opposed to Allopathy. *v.* Medical Science.

Homogangliata, (hō-mō-gang-li-ā'ta). [Gk. *homos*, similar; *ganglion*, nervous centre]= Articulata of Cuvier = Annulosa: animals composed of a succession of rings or somites formed by the outer integument, and having symmetrically arranged ganglionic centres: includes crustacea, insects, worms, &c.

Homogeneous, (hō-mō-jē'ne-us). [Gk. *homos*, like; *genos*, kind.] Of one kind only. *H. light:* light of one colour only, as red, yellow, blue, &c.

Homogenesis, (hō-mō-jen'e-sis). [Gk. *homos*, like; *gennao*, I produce.]=Gamogenesis: reproduction in which parent and offspring are alike. *v.* Genesis. Each germ produces but one individual; always uniaxial; universal with vertebrata; in plants the exception.

Homogenetic, (hō-mō-je-net'ik). [Homogenesis, *q v.*] Connected with, or relating to, Homogenesis.

Homogenies, (hō-mō-jen'i-ēz). [Gk. *homos*, like; *genos*, kind.] Suggested as in some cases preferable to Homologies.

Homogens, (hō'mō-jenz). [Gk. *homos*, like: *genos*, kind.] 1. Suggested by Lindley for birth-worts, nepenths, &c., which have only one zone of wood, however old. 2. Used by Lindley as=Exogens.

Homoiozoic belt, (hō-moi-ō-zō'ik). [*Homoios*, like; *zoe*, life.] Used by Forbes to express a belt of similar climate, which extends through many degrees of longitude but few of latitude.

Homological, (hō-mō-loj'i-kal). [Homology, *q.v.*] Following the organ, not its function, through all its modification in different organic structures.

Homologous, (hō-mōl'o-gus). [Homology, *q.v.*] Having the same name. *v.* Homology.

Homologues, (hō'mō-lōgz). [Homology, *q.v.*] Parts or organs in one organic structure answering to others in another structure, so that the same name may be applied to both: applied to the same parts or organs under every variety of function.

Homology, (hō-mol'o-ji). [Gk. *homologia*, agreement.] = Correspondence: agreement in origin sometimes accompanied with difference of development. Ex.: the arms of a man, the wing of a bird, and the fore-leg of a quadruped are homologous. *cf.* Analogues.

Homomorpha, (hō-mō-morf'a). [Gk. *homos*, same; *morphe*, shape.] Hemiptera, Homoptera, Orthoptera, &c.: insects in which the larva resembles the imago, but has no wings: active throughout life.

Homomorphism, (hō-mō-morf'izm). [Gk. *homos*, same; *morphe*, form.] Resemblance in external characters in animals, or plants, belonging to different families: usually found in places far apart. *v.* Mimicry.

Homonemeæ, (hō-mō-nem'e-ē). Fries's term for Algæ and Fungi.

Homoptera, (hō-mop'ter-a). [Gk. *homos*, same; *pteron*, wing.]=Plant suckers: a primary division of insects; insects having both pairs of wings alike. *cf.* Heteroptera. Fossil remains of H. are found in Purbeck and Lias rocks.

Homorgana, (hō-mor'ga-na). [Gk. *homos*, same; *organon*, organs.]=Schultz's term for cellular plants.

Homotaxis, (hō-mō-taks'is). [Gk. *homos*, same; *taxis*, arrangement.] Suggested by Huxley as a geologic term equivalent to Homology in Biology. Similarity of arrangement without contemporaneousness.

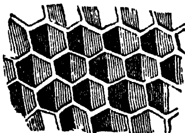
Homotypes, (hō'mō-tīps). [Gk. *homos*, same; Type.] Repetition of the same part, as in Vertebræ.

Hones, (hōnz)=Oilstones: used for sharpening cutting tools.

Honesty, (on'es-ti). A plant belonging to Brassicaceæ.

Hone-wort = Sison amomum; also = Trinia: plants belonging to Apiaceæ.

Honey, (hun'i). [*Hunig*, the A.-S. word] A semi-fluid sweet substance elaborated by bees from the fluids found in the nectaries of flowers *H. bearers*=Mellifera=Bees. *H. buzzard*=Falco apivorus. *H. comb:* 1. The cells of wax formed by hive bees; 2. Of sheep's stomach: a small pouch; called also reticulum. *H. comb moth*=Galleria cerella. *H. eaters*=Melliphagidæ: Australian birds, such as wattle bird, pell bird, &c., which feed on honey and insects; also used for other honey-eating birds. *H. guide*=Indicator: a bird belonging to Cuculidæ. *H. moth*=Achroia grisella. *H. locust*=Gleditschia triacantha. *H. ratel*=Viverra mellivora. *H. stone*=Mellite. *H. suckers*=Nectarinidæ: a division of Tenuirostres, *q.v.* *H.-suckle*= Woodbine = Lonicera periclymenum = Caprifolium perfoliatum. *Fly H.-suckle*=Lonicera xylosteum. *French H.-suckle* = Hedysarum coronarium. *H. sugar*, *v.* Sugar. *H. tea:* infusions of several plants found at the Cape of Good Hope are so called. *H. ware*= Alaria esculenta: a sea weed.


Honey-comb.

Hood-cap=Hooded seal=Phoca cristata.

Hooded. *H. chatterer*=Amphelis cucullata. *H. crow*=Corvus cornix. *H. seal* = Phoca cristata. *H. snake* = Cobra di capella: a venomous snake.

Hoof, (hōf). [*Hōf*, the A.-S. word] A modified nail, enclosing the whole of the last joint of the digit, as in hoofed beasts. *H. fungus* =Onygenei, belongs to Ascomycetes.

Hoofed beasts=Ungulata, *q.v.* Horses, oxen, &c.

Hooke's joint. [Dr. Hooke, the inventor.] A method of connection in machinery, allowing of motion in almost any direction; especially intended for shafts whose axes intersect each other. *H. gearing:* screw-gearing, by means of two wheels having the crests of the teeth oblique to the axis.

Hooker's classification of plants. *v.* Bentham and Hooker's classification.

Hooper swan=Cygnus ferus.

Hoop-shaver=Anthidium manicatorni: a bird which burrows in trees. *H. bee*=Eucera: a burrowing bee.

Hoopoes, (hō'pōz). [Imitation of its cry.]= Upupidæ: birds with barred plumage, and the sexes alike: build nest in hollow tree.


Hoopoe.

Hop, (hop). [*Hoppan*, the A.-S. name.]=Humulus: a twining plant, belonging to Cannabinaceæ, the seed vessels of which are used in beer brewing. *H. blight* = Perisporiacei: belongs to Ascomycetes. *H. trefoil*=Trefolium procumbens.

Hopeite, (hō'pīt). [Professor Hope.] A translucent mineral, chiefly phosphoric acid and zincic oxide.

Hoplichnus, (hop-lik'nus). [Gk. *hople*, hoof; *ichnos*, track.] A frog-like animal, known only by its fossil track. *v.* Lithichnozoa. *H. equus*=Chelichnus gigas.

Hoppers. 1.=Turnip fleas: beetles. 2. Cercopidæ: a family of Hemiptera. *Grass H.*= Gryllidæ.

Hops = The seed vessels of Humulus lupulus. *v.* Hop. *Bitter principle of H.* = Lupulite.

Horaninow's classification of organic beings, made 1834:—
Man.
Animals.
Phytozoa.
Vegetables.

H's. classification of plants:—
Spermophoræ=Dicotyledons.
Coccophoræ=Monocotyledons.
Pseudospermæ=Gymnosperm+Rhizanths.
Sporophoræ=Acotyledons.


Hop.

Horary, (hō'ra-ri). [L. *hora*, hour.]=Hourly.

Hordeaceæ, (hor-de-ā'se-ē). [Hordeum, q.v.] Wheat, rye, barley, &c.: a family of plants belonging to Gramınaceæ.
Hordein, (hor'dīn). [Hordeum, q.v.] An alkaloid principle found in barley.
Hordeum, (hor'de-um). [The Latin name.] =Barley, q.v.: a variety of corn, used for conversion to malt, belonging to Graminaceæ.
Horehound, (hōr'hownd). A plant belonging to Labiatæ. *Black H.*=Ballota. *White H.* Marrubium.
Horizon, (ho-rī'zon). [Gk. *horos*, limit.] *Artificial H.*: a sheet of mercury, or other reflecting plane surface: used in astronomical observations. *Rational H.*: a great circle of the heavens parallel to the sensible H., but passing through the centre of the earth. *Sensible H.*=*Visible H.*: the line in which the sky and earth seem to meet.
Horizontal, (hor-i-zon'tal). [Horizon, q.v.] Parallel with the horizon, level. *cf* Vertical.
Horn, (horn). [The A.-S. word.]=Keratin: a tough, translucent, thickened variety of epidermis, of which hollow horns, nails, whalebone, tortoise-shell, feathers, hairs, and scales are examples. *H. beam*=Carpinus betulus. *H. bill*, *v.* Hornbill. *H. bills*, *v.* Hornbills. *H.-blende*, *v.* Hornblende. *H. bug*=Stag beetle=Lucanus cervus. *H. eel*=Ammodytes tobianus. *H. fish*=Belone vulgaris. *H. lead*=Phosgenite. *H. poppy*=Glaucium. *H. quicksilver*=Calomel. *H. silver*=Kerargyrite. *H. wort*=Ceratophyllum. *H. worts*=Ceratophyllaceæ.
Hornan=ζ Pegasi.
Hornbill=Buceros, q.v.: an African building bird.
Hornbills=Bucerıdæ=Large crow-like birds, with enormous coloured bill. Both sexes alike; nest in hollow trees.


Hornbill

Horns. 1. *Hollow H.*=Bony extensions attached to the frontal bone of all ruminant animals, except camels and musk deer; found in all males, in females only occasionally. 2. *Bony H.*=Antlers: usually branched, and shed annually. Probably the result of an excess of nourishment; larger in cold, and smaller in warm countries.
Hornblende, (horn'blend). [Horn and Blende, q.v.]=Amphibole: found in syenite, basalt, porphyry, and other rocks: a silicate and aluminate of magnesium, calcium, and iron. *H. group of minerals*: includes amphibole, pyroxene, asbestos, augite, &c. *H. schist*: one of the metamorphic rocks.
Horned, (hornd). [Horn, q.v.] Having horns. *H. hog*=Babiroussa, q.v. *H. lark*=Alauda penicillata. *H. pheasant*=Ceriornis Blythii. *H. pond-weed*=Zannichellia. *H. poppy*=Glaucium. *H. ray*=Cephaloptera giorna; belongs to Batides. *H. tragopan*=Tragopan satyrus. *H. viper*=Acanthophis cerastinus=Cerastes: a viperine snake of Africa.
Hornet, (hor'net). [*Hyrnet*, the A.-S. name.] =Vespa crabro, a social wasp, feeds on insects. *H. beetle*=Quedius fulgidus. *H. fly* =Asilus. *H. moth*, *v.* Sphingidæ.
Hornitos, (hor'ni-tōs). [The Spanish word.] A variety of mudspring.
Hornsilver. A variety of kerate, q.v. Chiefly chloride of silver=Cerargyrite.
Hornstone. A mineral, chiefly silicate of iron, aluminum, magnesium, &c.
Horn-wort=Ceratophyllum, q.v.
Horn-worts=Ceratophyllaceæ, q.v.
Horny-matter=Keratin=Horn, q.v.
Horograph, (hō'rō-graf). [L *hora*, hour; *grapho*, I write.] Any instrument for marking the time.
Horologium, (hor-ō-lō'ji-um). [The Latin word.]=The Clock: a Southern Constellation.
Horology, (hor-ol'ō-ji). [Gk. *hora*, hour; *logos*, discourse.] 1. The science of the measurement of time. 2 The art of constructing chronometers and time-measurers generally.
Horrox, (hor'roks). [Mr. Horrox, 1639.] In moon, q.v.
Horse, (hors). [*Hors*, the A.-S. name]= Equus caballus: an animal belonging to Equidæ, all varieties of which are probably derived from one species: can endure extremes of heat and of cold, but not of humidity. In the humid region between Bengal and Japan no full-sized horse is known. *v.* Ungulata. *Fossil H.*, : Anchitherium, Equus, Hipparion, Hippotherium. *Little H.* =Equuleus, q.v. *Sea H.*=Trichechus rosmarus. *H. ant*=Formica rufa, named from its large size. *H. chestnut*=Æsculus hippocastanum. *H. chestnut* of America=Æsculus ohiotensis. *H. fish*=Hippocampus, q.v. *H. fly*=Tabanus; also=Hippobosca equina. *H. latitudes*=Calm-belt of Cancer, between 30° and 35° N. latitude. *H. power*: now describes size only of steam engines. Properly =33·000 lbs. raised one foot against gravity in one minute. *v.* Horse-power. *H. radish* =Hyperanthera moringa; also=Cochlearia armoracia=Armoracia. *H. tail*: 1.=Equisetum, q.v.; 2.=Hippuris. *H. tails*=Equisetaceæ, q.v. *H. stingers*=Dragon flies= Libellulæ.
Horse-flesh ore. A variety of Erubescite, an ore of copper.
Horse-power. In Britain=550 lbs. raised one foot per second; in France=75 kilogrammes raised one metre in a second. The two are nearly equal.
Horse-shoe. *H. bat*=Vespertilio ferrumequinum. *H. crab*=Limulus Moluccanus. *H. magnet*=A magnet shaped like a horseshoe, so that the poles are brought close together. *H. vetch*=Hippocrepis.
Hotsprings. *v.* Geysers.
Hottentots, (hot'n-tots). A S. African people.
Hottonia, (hot-tō'ni-a). [P. Hotton, a Dutch botanist.]=Water violet: a floating herb, belonging to Primulaceæ.
Houldsworth's pyrometer. *v.* Pyrometer.
Hound, (hownd). [*Hund*, the A.-S. name.]

A dog used for hunting, as stag-hound, fox-hound, deer-hound, &c.

Hound's-tongue=Cynoglossum, *q.v.*

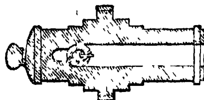
Hour, (our). [*Heure*, the French word.] $\frac{1}{24}$ of a mean solar day: divided into 60 minutes. *v.* Time. *H. angle:* the angular distance of a given star, &c., from the meridian: may be expressed in hours, minutes, &c. *H. circle:* a portion of the apparatus belonging to an equatorial telescope, which indicates the right ascension of any given object.

House, (hous). [*Hûs*, the A.-S. word.] *H. flies*=Musca. *H. gecko*=Lacerto gecko. *H. leek*=Sempervivum tectorum. *H. leeks*=Crassulaceæ, *q.v.* *H. lizard*=Chichack, a Borneon lizard. *H. martin*=Chelidon urbica. *H. sparrow*=Pyrgita domestica =Passer domesticus.

House builder moth = Oiketicus Sandersii: builds a pensile nest.

Hovite, (hō'vīt). [Mr. Hove.] A soft friable mineral, chiefly bicarbonate of lead.

Howitzer, (how'it-zer). [*Haubitze*, the German word.] A gun used for the discharge of shells of large size at short ranges.


Howitzer.

Howlers = Howling-monkeys, *q.v.*

Howling-monkeys =*Mycetes*: slow, clumsy, arboreal animals, with long prehensile tails; belong to Cebidæ, *q.v.*; correspond to the baboons of the Old World.

Howlite, (how'līt). A mineral, chiefly hydrated borate of lime.

Hows, (howz). A Yorkshire term for tumuli.

Howson's barometer. A column of mercury in a glass tube, with central glass tube: a modified and very sensitive form of the common barometer.

Hoy, (hoy). [*Heu*, the French word.] A small coasting vessel.

Huascolite, (hō-as'kō-līt). [Huascò.] A mineral, chiefly sulphide of lead and zinc

Hubnerite, (hub'ner-īt). A mineral, chiefly tungstate of manganese.

Hue, (hū). [*Hui*, the A.-S. word.] Gradation of colour. *cf.* Tint.

Huggins. [Dr. Huggins.] *H.'s granules. v.* Granules.

Hugoniaceæ, (hū-gō-ni-ā'se-ē). [Hugonia, typ. gen.]=Oxalidaceæ, *q.v.*

Huguier's canal. In the temporal bone, for the passage of the chorda tympani nerve to pass through; named after the discoverer.

Human, (hū'man). [*Humanus*, the Latin word.] Relating to mankind. *H. ear:* can distinguish sounds caused by vibrations of between 12 and 38,000 per second; and so has a range of about 11 octaves. *v.* Sound. *H. voice:* produced by the action of the vocal chords, *q.v.* *H. species:* the varieties of men. *v.* Man. *H. remains:* found in caves of Post Pliocene rocks; usually in limestone districts.

Humble-bees, (hum'bl). [Ger. *hummel*, humming.]=Bombus: wild social bees; insects belonging to Hymenoptera; also called Dumble-bees.

Humboldtilite, (hum-bōld'ti-līt). [Humboldt; Gk. *lithos*, stone.]=Melilite, *q.v.*

Humboldtine, (hum'bōld-tīn). A mineral, chiefly hydrated oxalate of iron.

Humboldtite, (hum'bōld-tīt). [Humboldt.] =Datalite: a mineral, chiefly oxalate of lime.

Humerus, (hū'me-rus). [The Latin word.] The bone of the upper arm, in vertebrate animals; not developed in fishes.

Humic acid, (hū'mik). [L. *humus*, the earth.] =$C_{20}H_{12}O_6$: one of the constituents of the mould of decaying wood.

Humidity, (hū-mid'i-ti). [L. *humidus*, moist.] Saturation with moisture, so that part of it is deposited on bodies which come in contact.

Humiriaceæ, (hō-mi-ri-ā'se-ē). [From the native name in Guiana.]=Humiriads: tropical balsamic trees and shrubs with leathery leaves, belonging to Ericales.

Humite, (hū'mīt). [Humus, *q.v.*] A translucent vitreous mineral, chiefly silicate of iron and magnesium.

Humming-birds, (hum'ming). [Named from the noise they make.] = Trochilidæ, *q.v.*: birds, belonging to Insessores, of which there are several genera; Phæthornis, Oreotrochilus, Grypus, Thalurania, &c. *Humming-bird moth* =Macroglossa stellatarum, resembles humming-bird.


Humming-bird.

Humopinic acid=Humopic acid: an amorphous acid substance obtained from narcotine.

Humorum=Mare Humorum: one of the plains on the surface of the moon, formerly supposed to be a sea.

Humours, (hū'morz). [L. *humor*, moisture.] Watery liquids within the eye, which keep it in shape. *Aqueous H.* fills the cornea of the eye. *Vitreous H.* fills the sclerotic of the eye.

Humulus, (hū'mu-lus). [L. *humus*, rich soil.] =Hop: a twining herb, belonging to Cannabinaceæ.

Humus, (hū'mus). [L. *humus*, the earth.]= Ulmus=Ulmin = Gein: a dark colouring matter in leaves; the mould of decaying wood.

Hundred. *H. legs*=Scolopendra: a centipede. *H.-weight*, 112 lbs. *v.* Weights.

Hungarian, (hung-gā'ri-an)=Magyar: a European people. *H. balsam*, from Pinus pumilio. *H. wine-oil*=Œnanthic ether.

Hunter's classification of animals:—Mammalia and birds: having a heart with four cavities. Reptilia and Amphibia: having a heart with three cavities. Fishes and Molluscs (pars.): having a heart with two cavities. Articulated animals: having a heart with one cavity. Medusæ, having the heart and stomach identical.

Hunter's screw. A form of the differential screw, *q.v.*

Hunter's theory of life: that it is the cause and not the consequence of organization.

Hunterite, (hun'tĕr-it). [Mr. Hunter.]=Cimolite: a mineral.

Hunting-cog. An odd tooth in a train of wheelwork. *v.* Wheel-train.

Hura, (hŏ'ra). A plant belonging to Euphorbiaceæ. *H. crepitans*=Sand box tree: has poisonous seeds.

Huronian rocks, (hū-rō'ni-an). [Lake Huron.] A group of primary rocks; chiefly quartzite; of great thickness; above Laurentian, and below Cambrian rocks.

Hurria=Hurriah=Coluber hurriah: a snake

Hurricane, (hur'ri-kān). [Modification of a Caribbean word.] A violent wind, moving at from 30 to 120 miles per hour.

Hutton's theory: that present existing causes have produced all geological phenomena.

Huttonians = Vulcanists = Plutonists: geologists holding Hutton's theory.

Huxley's classification of animals. A morphological arrangement, dependent on the general structure.

Vertebrata.

Mollusca.	Annulosa.
Molluscoida.	Annuloida.
Cœlenterata.	Infusoria.

Protozoa.

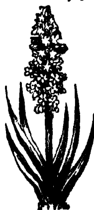
Huxley's classification of Primates:—

Anthropidæ=Man.
Simiadæ=Monkeys.
Lemuridæ=Lemurs.

Huxley's classification of Birds:—

Saururæ.
Ratitæ.
Carinatæ.

Hyacinth, (hi'a-sinth). [*Hyacinthus*, the Latin name.] 1. A mineral, chiefly silicate of zirconium. 2. A plant=Hyacinthus. *Wild H.* = Scilla nutans. *Grape H.*=Muscari comosum. *Starch H.*=Muscari racemosum.


Hyacinth.

Hyacinthinæ, (hī-a-sin'thi-nē). [Hyacinth, *q.v.*]=Liliaceæ, *q.v.*

Hyacinthus, (hī-a-sin'thus). [The Latin name.]=Hyacinth: a plant belonging to Liliaceæ. *H. nutans*=Harebell.

Hyades, (hī'a-dēz). [The Latin name.] A group of stars surrounding Aldebaran. *v.* Star clusters.

Hyæna, (hī-ē'na). [The Latin name.]=Canis hyæna; a carnivorous animal, remarkable for its ferocity, probably an aberrant form of Viverra: has four toes only on each foot: found chiefly in S. Africa and S. Asia. *Cave H.*=H. spelæus or spelæa. *Fossil H.* found in Miocene rocks. *Spotted H.* = H. crocata. *Hunting H.* = *H. dog*=Lycaon pictus. *H. villosa*=Strand-wolf.


Hyæna.

Hyænic acid, (hī-ē'nik). [Hyæna, *q.v.*] $C_{25}H_{50}O_2$: a buttery musky substance, found in the anal glands of the hyæna.

Hyænictis, (hī-ē-nic'tis). [Hyæna, *q.v.*] An animal, intermediate between the hyæna and civet, known only by fossil remains found in the Miocene of Pikermi.

Hyænina, (hī-ē'ni-na). [Hyæna.]=Hyænidæ: a family of carnivorous animals, of which the hyæna is the type.

Hyænodon, (hī-ē'no-don). [Hyæna, *q.v.*; Gk. *odous*, tooth.] A carnivorous animal, resembling the hyæna, known only by fossil remains found in Upper Eocene rocks.

Hyaline, (hī'a-lin). [Gk. *hyalos*, glass.] Vitreous; resembling glass. *H. quartz*=Rock-crystal. *H. shells*=Vitreous shells.

Hyalite, (hī'a-līt). [Gk. *hyalos*, glass; *lithos*, stone]=Muller's glass: a variety of opal.

Hyaloid membrane, (hī'a-loid). [Gk. *hyalos*, glass; *eidos*, form.] In the human eye: a delicate transparent membrane investing the vitreous body.

Hyalonema, (hī-a-lon'e-ma). [Gk. *hyalos*, glass.] *H. lusitanicum*: probably a siliceous sponge; found at the bottom of the Atlantic; also called glass-plant and glass-rope. *H. Sieboldii*: a sponge, the stem of which is called flint-rope.

Hyalonemadæ, (hī-al-on-em'a-dē). [Gk. *hyalos*, glass.]=Glass Zoophytes: a division of Spongida, *q.v.*; considered to be siliceous sponges; also considered as belonging to Actinozoa.

Hyalophane, (hī'al-ō-fān). [Gk. *hyalos*, glass; *phaino*, I appear.] A mineral of the Felspar group.

Hyalosiderite, (hī-al-ō-sid'ĕr-īt). [Gk. *hyalos*, glass, *sideros*, iron.]=Chrysolite, *q.v.*

Hybernation, (hī-bĕr-nā'shun). [L. *hiberna*, winter dwelling.] Lying dormant during winter.

Hybodontes, (hī-bo-don'tēz). [Gk. *hybos*, curved; *odous*, tooth.] Fishes, somewhat resembling the shark, known by fossil teeth and other remains, found chiefly in Mezozoic rocks.

Hybodus, (hī'bō-dus). [Gk. *hybos*, curved; *odous*, tooth.] A placoid fish, resembling the shark, many species of which are known, but only by fossil teeth and spines, found in the Lias and Trias.

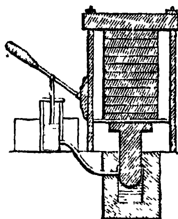
Hybrid, (hī'brid). [*Hibrida*, the Latin name.] A plant or animal, the offspring of parents of different species: as the mule. Sometimes expressed by the two names, that of the male parent being first.

Hybridism, (hī'brid-izm). [Hybrid, *q.v.*] Has its zero of fertility between different families; and its maximum of fertility often between different species of the same genus.

Hybridization, (hī-brid-i-zā'shun). [Hybrid, *q.v.*] Fertilization of one individual by another of a different species.

Hydantoic acid, (hī-dan-tō'ik). 1. $C_3H_6N_2O_3$: a crystalline substance; also called Glycoluric acid. 2. Also formerly=Allantoic acid.

Hydantoin, (hī-dan-tō'in)=$C_3H_4N_2O_2$: a crystalline substance; also called Glycolyl-urea, obtained from uric acid.
Hydatid, (hī'da-tid). [Gk. *hydatis*, vesicle.] =Bladder worm: the cystic form of the larva in tape worms.
Hydnei, (hid'ne-ī). [Gk. *hydnon*, truffle.]= Spine-bearing fungi: belonging to Hymenomycetes, having the hymenium spread over the surface of spines, &c.
Hydnocarpus, (hid nō-kār'pos). [Gk. *hydnon*, tuber: *karpos*, fruit.] A plant belonging to Flacourtiaceæ. *H. inebrians* = An Indian tree: fruit used to poison fish.
Hydnoreæ, (hid'nor-e-ē)=Cytinaceæ, *q v.*
Hydnum, (hid'num). [Gk. *hydnon*, truffle.] A fungus. *H. repandrum*=Hedgehog mushroom.
Hydra, (hī'dra). [L. *hydra*, water serpent.]= 1. The Snake: also called Serpens Aquaticus, a widely extending constellation in the southern heavens: the chief star of which is Alphard. 2. Fresh-water polyp; the type of Hydrozoa; about ½ inch long, with long slender tentacles, reproduced by buds, which soon drop off. A perfect hydra grows from any fragment. *H. tubes*=Generative system of some hydrozoa: a trumpet-shaped body, with mouth and tentacles, which breaks up into Ephyræ, which, in turn, reproduce hydra tubes=The second stage of Rhizostomidæ=Trophosome of R.=Fixed R.
Hydra- (hī'dra). [Gk. *hydor*, water.] A prefix, implying water or hydrogen as a constituent.
Hydra sounding machine: used in the Porcupine expedition of 1869, named from being first used in the ship Hydra.
Hydrachnidæ, (hī-drak'ni-dē). [Hydra and Arachnida, *q.v.*]=Water mites: small animals, belonging to Acarina; parasitic on aquatic insects.
Hydracids, (hī-dras'idz). [Hydra and Acid.] Acids in which hydrogen is an essential element, as hydrochloric acid; mostly gaseous. Formerly used when oxygen was regarded as the more usual constituent of acids. Now all acids are regarded as hydracids.
Hydradephaga, (hī-dra-def'a-ga). [Hydra, *q.v.*; Gk. *phago*, I devour.] Predacious aquatic beetles, belonging to Coleoptera.
Hydræ, (hī'drē). [Hydra, *q.v.*] = Plural of Hydra: a sub-division of Hydrozoa, said to be named from the fact that a perfect animal will grow from any portion of one.
Hydrales, (hi-drā'lēz). [Hydra, *q.v.*] Aquatic plants, with unisexual flowers, forming a division of Endogens.
Hydramides, (hī'dra-mīdz). [Hydra and Amide, *q.v.*] Ammonia and aromatic acids.
Hydramyle, (hī'dra-mil). [Hydra and Amyl, *q.v.*]=C_5H_{12}=Hydride of Amyl: a fluid, the vapour of which is an anæsthetic.
Hydrangea, (hī-dran'gē-a). [Gk. *hydor*, water; *aggos*, vessel.] A plant, the type of Hydrangeaceæ.
Hydrangeaceæ, (hī-dran-jē-ā'se-ē). [Hydrangea, *q.v.*] = Hydrangeads: shrubs, with opposite leaves and large flowers, belonging to Saxifragales. Named from growing in moist places.
Hydrargo, (hī-drār'go). [Hydrargyrum.] A prefix implying the presence of mercury.
Hydrargyrum, (hī-drar'ji-rum). [Gk. *hydor*, liquid; *argyron*, silver.] Hg″=Mercury: a metallic element, liquid between 660° and −38° F., lustrous, and not readily oxidisable; much used in the arts.
Hydrate, (hī'drāt). [Gk. *hydor*, water.] *H. of ammonium*=Ammonia. *H. of carbon:* compounds containing carbon with hydrogen and oxygen in the proportions contained in water. *H. of iron*=Limonite=Prismatic iron-ore=Brown oxide of iron. *H. of potassium*=Caustic potash.
Hydrated, (hī-drā'ted). [Hydrate, *q v.*] Combined with water so as to form a hydrate.
Hydrates, (hī'drāts). [Hydra, *q.v.*] Combinations of substances with water, in definite proportions and with great affinity.
Hydraulic, (hī-draw'lik) *H. pressure:* the pressure of water; capable of being applied with great force and delicate manipulation. *H. press:* an apparatus for the application of great power by means of water; also called Bramah press. *H. lime* hardens under water. *H ram:* a ram acted upon by hydraulic pressure. *H. tourniquet:* an instrument for causing the rotation of a tube, having bent ends, from which water is allowed to flow; also called Barker's mill, *q v.*


Hydraulic press.

Hydraulics, (hī draw'liks). The application of the laws of hydrostatics to the use of water as a motive power, or to the raising of water.
Hydric, (hī'drik). [Hydrogen, *q.v.*] A general prefix for salts, in which hydrogen acts as a metal. *v.* Hydrogen. *H. bromate*=Bromic acid=$HBrO_3$. *H. bromide*=Hydrobromic acid=HBr. *H. chlorate*=Chloric acid=$HClO_3$ *H. chloride*=Hydrochloric acid=HCl. *H. cyanide*=Hydrocyanic acid =HCy. *H. dioxide*=Hydroxyl=H_2O_2. *H. fluoride*=Hydrofluoric acid=HF. *H. iodate* =Iodic acid=HIO_3. *H. iodide*=Hydriodic acid=HI. *H. nitrate*=Nitric acid=HNO_3. *H. perbromate* = Perbromic acid = $HBrO_4$. *H. perchlorate* = Perchloric acid = $HClO_4$. *H. peroxide*=Hydroxyl=H_2O_2.
Hydrida, (hī'dri-da). [Hydra, *q.v.*; Gk. *eidos*, form.]=Gymnochroa=Hydra, *q.v.*
Hydridæ, (hī'dri-dē). [Hydrus, *q.v.*; Gk. *eidos*, form.] A family of venomous sea-snakes. *v.* Ophidia.
Hydrides, (hī'drīdz). [Hydra, *q.v.*] Compounds of hydrogen with another element. *H. of caproyl*=Hexyl. *H. of hydrogen*= H_2=Di-hydrogen. *H. of œnanthyl*=Heptyl. *H. of methyl* = Marsh gas; causes death by

negation of breathing. *H. of phenyl*= Benzene, *q.v.*

Hydriformia, (hī-dri-for'mi-a). A sub-division of Polyps, by Hœven.

Hydriodic acid, (hī-dri-od'ik). [*Hydrogen* and *Iodic.*] = HI = Hydric iodide: a colourless fuming gas.

Hydrindic acid, (hī-drin'dik). [*Hydro* and *Indic.*]=Dioxindol. Derived from indigo.

Hydrindin, (hī-drin'din). [*Hydro* and *Indin.*] *v.* Indin.

Hydro- (hī'drō). [Abb. of hydrogen, *q.v.*] A prefix to the name of an acid that contains no oxygen: as hydrochloric acid, hydrosulphuric acid, &c.; and used generally to imply the presence of hydrogen as an important constituent.

Hydrobenzamide, (hī-drō-ben'za-mīd). [Hydro and Benzamide.] $C_{21}H_{18}N_2$: a crystalline substance; ammonia and oil of bitter almonds.

Hydrobromic acid, (hī-drō-brō'mik). [Hydro and Bromic, *q.v.*] = HB=Hydric bromide= A powerfully-acid gas, resembling hydrochloric acid.

Hydrocarbons, (hī-drō-kár-bonz). [Hydro and Carbon, *q.v.*] Compounds of hydrogen and carbon, which belong to the inflammable group of minerals: include naphtha, petroleum, asphalte, maltha, copalite, &c., marsh gas, olefiant gas, cetylene, &c. *H.*, when oxdisied, form acids, alcohols, &c. *H.* are arranged in groups, according to number of equivalents of C. and H. as follows:—

1st Series,	C_nH_{2n+2}	=Paraffins, *q.v.*
2nd	,,	C_nH_{2n}=Olefines, *q.v.*
3rd	,,	C_nH_{2n-2}=Acetylene series.
4th	,,	C_nH_{2n-4}=Quintone, terpenes, &c.
5th	,,	C_nH_{2n-6}=Aromatic hydrocarbons =Coal tar series=Benzol series.
6th	,,	C_nH_{2n-8}=Phenylene, Cinnamene, &c.
7th	,,	C_nH_{2n-10}=Cholesterene, &c.
8th	,,	C_nH_{2n-12}=Naphthalene, &c.
9th	,,	C_nH_{2n-16}=Stilbene, &c.
11th	,,	C_nH_{2n-18}=Anthracene, &c.
12th	,,	C_nH_{2n-24}=Chrysene, &c.

The 1st Series have been named methane, quartane, quintane, &c.; 2nd, methene, quartene, quintene, &c; 3rd, quartine, quintine, &c.; 4th, quartone, quintone, &c.; 5th, quartune, quintune, &c., the vowels a, e, i, o, u, expressing the series in order.

Hydrocaryes=Haloragaceæ, *q.v.*

Hydrocaulus, (hī-drō-kaw'lus). [Hydro; L. *caulus*, stem.] The main portion of the cœnasarc of hydrozoa.

Hydrocephalus, (hī-drō-sef'a-lus). A trilobite found in Cambrian rocks of Bohemia.

Hydroceræ=Balsaminaceæ, *q.v.*

Hydrochærus, (hī-drō-kē'rus). An animal belonging to Rodentia. *H. capybara*=Capybara of S. America.

Hydrocharidaceæ, (hī-drō-kar-i-dā'se-ē). [Hydrocharis, *q.v.*] Hydrocharads: fresh water plants, with flowers in scathes, belonging to Hydrales.

Hydrocharis, (hī-drok'a-ris). [Hydro, *q.v.*; Gk. *charis*, grace.] = Frog-bit: a floating herb, the type of Hydrocharidaceæ. *H. morsusranæ*=Lesser Water Lily.

Hydrochlorates, (hī-drō-klō'rātz). [Hydro and Chlorate, *q.v.*] Compounds of hydrochloric acid and bases=Chlorides.

Hydrochloric acid, (hī-drō-klō'rik). [Hydro and Chloric, *q.v.*] = HCl = Muriatic acid= hydric chloride: a pungent colourless incombustible gas, with intensely acid properties: in solution, much used as a solvent.

Hydrocomenic acid. $C_6H_6O_5$: a yellow liquid.

Hydrocorisæ, (hī-drō-kor'i-zē). [Hydro, *q.v.*; Gk. *koris*, bug.]=Water bugs: insects belonging to Heteroptera.

Hydrocotyle, (hī-drō-kot'i-lē). [Gk. *hydor*, water; *kotyle*, cup.] = White rot = Pennywort: a small herb belonging to Apiaceæ; also called Sheeprot.

Hydrocyanic acid, (hī-drō-sī'a-nik). [Hydro and Cyanic, *q.v.*] Prussic acid = Hydric cyanide = formionitrile = HCN = HCy: a colourless, very volatile inflammable liquid, obtainable from the leaves and fruit of the peach, laurel, bitter almonds, &c.

Hydrocysts, (hī'drō-sists). [Hydra, *q.v.*: Gk. *kystis*, bladder.]=Feelers: processes found in some hydrozoa.

Hydrodolomite, (hī-drō-dol'o-mīt). [Hydro and Dolomite, *q.v.*] A mineral of the calcite group.

Hydrodynamics, (hī-drō-dī-nam'iks). [Hydro and Dynamics, *q.v.*] The science of the motions of liquid bodies.

Hydrœcium, (hī-drē'si-um). [Hydra, *q.v.*; Gk. *oikos*, house.] A cavity in hydrozoa, into which the cœnosarc can be retracted.

Hydroelectric machine, for generating electricity by the friction of steam escaping through narrow openings.

Hydroferrocyanic acid=H_3FdCy=$H_4C_6N_6Fe$: a crystalline compound of ferricyanogen and hydrogen.

Hydrofluoric acid, (hī-drō-flū'ō-rik). [Hydro and Fluoric, *q.v.*]=HF=Hydric fluoride: a transparent volatile fuming liquid, which dissolves most of the metals, and etches glass.

Hydrofluosilicic acid, (hī-drō-flū-ō-si-lis'ik). [Hydro, Fluo, and Silicic, *q.v.*]=Silicofluoric acid, *q.v.*

Hydrogen, (hī'drō-gen). [Gk. *hydor*, water; *gennao*, to produce.]=H'; also called inflammable air: a colourless, inodorous, tasteless gas; the lightest of all known bodies; which burns in contact with oxygen and forms water; the standard for comparison of atomic volume and weight of other gases; hypothetically the first of the marsh-gas series. *v.* Hydric. *H. acetate*=Acetic acid. *H. benzoate* = Benzoic acid. *H. borate* = Boracic acid. *H. carbolate*=Carbolic acid. *H. chloride*=Hydrochloric acid. *H. cyanide*=Hydrocyanic acid. *H. dioxide*=Hydroxyl. *H. gallate* = Gallic acid. *H. phenate*=Phenic acid. *H. phosphate*=Phosphoric acid. *H. sulphate* = Sulphuric acid. *H. sulphide*= Hydrosulphuric acid. *H. sulphite* = Sulphurous acid. *H. tartrate*=Tartaric acid.

Hydrogen theory of boiler explosions; that the contained water is decomposed by con-

tact with hot iron into hydrogen and oxygen, and that the hydrogen explodes.

Hydrogen type=Hydrochloric type: the type of chemical combination, of which the formation of hydrochloric acid is an example: includes all the metals, aldehydes, ketones, and hydrocarbons.

Hydrogenium, (hī-drō-jen'i-um). [Hydrogen, *q.v.*; Gk. *gennao*, I produce.] The hypothetical metal of which hydrogen is supposed to be the vapour.

Hydrographical, (hī-drō-graf'i-kal). [Hydro, *q.v.*; Gk. *grapho*, I write.] Connected with, or relating to, hydrography.

Hydrography, (hī-drog'ra-fi). [Hydro, *q.v.*; Gk. *grapho*, I write.] The measurement and description of large bodies of water, as the sea, rivers, lakes, &c.

Hydroid, (hī'droid). [Hydra, *q.v.*; Gk. *eidos*, form.] Connected with, or resembling hydræ. *H. Zoophytes:* those which secrete coral=Hydroida: the early form of medusæ and jelly fishes.

Hydroida, (hī-droi'da). [Hydra, *q.v.*; Gk. *eidos*, form.] A primary division of Hydrozoa, mostly compound, and usually fixed to some foreign body, usually in a horny sheath.

Hydrokinetics. *v.* Kinetics.

Hydroleaceæ=Hydrophyllaceæ, *q.v.*

Hydroleic acid, (hī-drol'e-ik). [Hydro and Oleic, *q.v.*] *v.* Oleic acid.

Hydrolite, (hī'dro-līt). [Hydro, *q.v.*; Gk. *lithos*, stone.] A mineral; also called Gmelinite, *q.v.*

Hydromagnesite, (hī-drō-mag'nē-sīt). [Hydro and Magnesium, *q.v.*] A mineral, belonging to the calcite group.

Hydromellonic acid (hī-drō-mel-lon'ik). [Hydro and Mellon, *q.v.*]=$H_3C_9N_{13}$, a substance compounded of hydrogen and mellon.

Hydrometer, (hī-drom'e-ter). [Hydro and Meter, *q.v.*] An instrument to determine specific gravity by the measurement of the weight of a volume of water equal to the volume of the given substance.

Hydrometrica, (hī-drō-met'ri-ka). [Hydro, *q.v.*]=Funaria hydrometrica=Cord moss, an Urn-moss.

Hydrometridæ, (hī-drō-met'ri-dē). [Hydro and Meter, *q.v.*; Gk. *eidos*, form.]=Water gnats: a family of insects, belonging to Heteroptera.

Hydropeltideæ, (hī-drō-pel-tid'e-ē). [Hydro, *q.v.*; Gk. *pelte*, shield.] = Hydropeltidineæ, *q.v.*

Hydropeltidineæ, (hī-drō-pel-ti-din'e-ē). [Hydro, *q.v.*; Gk. *pelte*, shield.]=Water-shields: aquatic plants, with solitary flowers=Cabombaceæ, *q.v.*

Hydrophane, (hī'drō-fān). [Hydro, *q.v.*; Gk. *phaino*, I appear.] A variety of opal, which becomes translucent in water.

Hydrophidæ, (hī-drof'i-dē). [Hydrophis, the typical genus.]=Water snakes: a family of venomous serpents. *v.* Ophidia.

Hydrophora, (hī-drof'o-ra). [Hydra, *q.v.*; Gk. *phoreo*, I bear.] A primary division of Hydrozoa; have numerous tentacles; form, by budding, free swimming zoids.

Hydrophyllaceæ, (hī-drō-fil-lā'se-ē). [Hydrophyllum, *q.v.*] = Hydrophyls: American plants, with rough leaves and gay flowers, forming a division of Cortusales.

Hydrophyllum, (hī-drō-fil'lum). [Hydro, *q.v.*; Gk. *phyllon*, leaf.]=Water-leaf: a plant the type of Hydrophyllaceæ.

Hydrophyta, (hī-drof'i-ta). [Hydro, *q.v.*; Gk. *phytos*, plant.]=Algales, *q.v.*

Hydropiper, (hī-drō'pi-per). [Hydro and Piper, *q.v.*]=Elatine hydropiper=Water-pepper: a plant belonging to Elatinaceæ.

Hydropiperoin, (hī-drō-pip'er-oin). [Hydropiper, *q.v.*]=$C_{16}H_{14}O_6$: a substance obtained from Hydropiper.

Hydropotassic, (hī-drō-po-tas'ik). [Hydro and Potassic, *q.v.*] *H. salts:* hydrated salts of potassium.

Hydroquinone, (hī-drō-kwi-nōn'). [Hydro and Quinine, *q.v.*]=Arctuvin, *q.v.*

Hydrorhiza, (hī-dro-rī'za). [Hydra, *q.v.*; Gk. *rhiza*, root.] The adhering base of a Hydrozoon.

Hydrosaurus, (hī-drō-saw'rus). [Hydro and Saura, *q.v.*]=Lace-lizard: an animal belonging to Iguanidæ.

Hydroselenic, (hī-drō-sē-len'ik). [Hydro and Selenium, *q.v.*] *v.* Selenic.

Hydrosoma, (hī-drō-sō'ma). [Hydra, *q.v.*; Gk. *soma*, body.] The entire body of a hydrozoon, whether simple, as in Hydra, or compound, as in Sertularia.

Hydrostatics, (hī-drō-stat'iks). [Hydro and Statics, *q.v.*] The science of forces that are in equilibrium in liquids. *H. arch:* an arch adapted to support the pressure of a body of water. *H. balance.* an instrument to determine the specific gravity of a solid body or of a liquid. *H. paradox*, *v.* Paradox.

Hydrosulphates, (hī-drō-sulf'āts). [Hydro and Sulphates, *q.v.*] Compounds of hydrosulphuric acid with bases.

Hydrosulphocyanic acid=HCyS: a compound of hydrogen, sulphur, and cyanogen: an odorous, oily, poisonous liquid.

Hydrosulphuric acid, (hī-drō-sul-fū'rik). [Hydro and Sulphuric, *q.v.*]=H_2S=Dihydric=Sulphuretted hydrogen: a colourless, poisonous gas, with strong disagreeable odour

Hydrotheca, (hī-drō-thē'ka). [Hydra, *q.v.*; Gk. *theka*, case] Little cup-like expansions, in compound hydrozoa, into which polypites fit.

Hydrothermal, (hī-drō-ther'mal). [Hydro and Thermal, *q.v.*] Relating to the action of heated water.

Hydrotic acid, (hī-drot'ik)=Sudoric acid.

Hydrous, (hī'drus). [Hydra, *q.v.*] An insect belonging to Hydrophilidæ. *H. piceus*=Black water-beetle.

Hydroxyl, (hī-droks'il). [Hydro and Oxygen, *q.v.*]=H_2O_2=Peroxide of hydrogen=Hydric dioxide: a colourless bleaching liquid easily decomposed.

Hydroxylamine, (hī-droks-il'a-mīn). [Hydroxyl and Amine, *q.v.*]=NHzO: a volatile base, known only in solution.

Hydrozoa, (hī-drō-zō'a). [Hydra, *q.v.*; Gk. *zoon*, animal.] Jelly-fishes, sea-firs, &c.;

Aquatic animals, forming a division of Cœlenterata, resembling the hydra, and consisting of layers of cellular tissue, enclosing a digestive cavity, the mouth of which is usually surrounded by tentacles; mostly marine. *Compound H.*=Corallines. Classification of H. by Huxley: Hydrophora, Siphonophora, Discophora, Trachymedusæ.

Hydrozoon, (hi-drō-zō'on). [Hydro and Zoon, *q.v.*] An individual of Hydrozoa, *q.v.*

Hydrurets, (hi-drō'rets). [Hydrogen, *q.v.*]= Hydrides, *q.v.*

Hydrus, (hī'drus). [The Latin word.] 1.= Water-serpent: a constellation. 2 A serpent with maxillary teeth and poison fangs

Hygeia, (hij-ē'a). [Classical.] No. 10 of the Minor Planets.

Hygre, (hī'gr). [Gk. *hygros*, wet.]=Bore, *q.v.*

Hygrometer, (hi-grom'e-ter). [Gk. *hygros*, wet; Meter, *q.v.*] An instrument used for hygrometry. *Chemical H.:* some substance, such as calcic chloride, which absorbs moisture. *Daniell's H.:* two glass bulbs, one containing ether, which is cooled by evaporation until dew is deposited on the outside. *Observatory H.:* two bits of wood glued together, which move to or fro according as the dampness increases or diminishes. *Regnault's H.* resembles Daniell's H., but of silver.

Hygrometric, (hi-grō-met'rik). [Hygrometer, *q.v.*]

Hygrometry, (hi-grom'e-tri). [Hygrometer, *q.v.*] The measurement of the amount of aqueous vapour in the air, either by absorbing the moisture from a given quantity of air, by finding the point at which dew is deposited, or by a psychrometer.

Hygroscope, (hī'gros-kōp). [Gk. *hygros*, wet; *skopeo*, I show.] An instrument for showing the increase or decrease of moisture in the air.

Hyk=Cepheus: one of the northern constellations.

Hyla, (hī'la). [Gk. *hyla*, forest.]=Tree-frog: an animal, belonging to Anoura, found in S. America and Australia; not known in S Africa or India; can climb trees by means of suckers on toes. *H. arborea*=Rana arborea =Tree-frog.

Hylæosaurus, (hī-lē-ō-saw'rus). [Gk. *hyla*, forest; *saurus*, lizard.] = Forest-lizard: a reptile, known by fossil remains found in Wealden rocks, belongs to Deinosauria, *q v.*

Hylerpeton, (hī-ler'pe-ton). [Gk. *hyla*, forest; *herpeton*, reptile.] A land animal of the coal period, probably a reptile somewhat adapted to an aquatic life, known only by some bones of the head and a few other bones.

Hylobates, (hī-lob'a-tēz). [Gk. *hylobates*, wood-walker.]=Gibbon: an arboreal monkey belonging to Catarhina. *H. agilis:* a gibbon able to sing an octave of half notes.

Hylodes, (hī'lo-dēz). [Hyla, *q.v.*] A tree-frog, an American variety of which lays its eggs singly in axils of leaves of trees.

Hylonomus, (hī-lon'ō-mus). [Gk. *hyla*, forest; *nomos*, dwelling.] A small reptile, 5 or 6 inches long, found in coal of Nova Scotia.

Hylorana, (hī-lor-ā'na). [Gk. *hyla*, forest; *rana*, frog.] *H. jerboa:* the thinnest of all frogs and toads.

Hylotoma, (hī-lot'o-ma). [Gk. *hyla*, forest; *tomeos*, cutter] An insect belonging to Hymenoptera. *H. rosæ*=Rose saw-fly.

Hymen, (hī'men). [Gk. *hymen*, membrane.] A fold of mucous membrane closing the entrance to the vagina.

Hymenæa, (hī-men-ē'a). A tree, belonging to Leguminaceæ, from some species of which copal is obtained.

Hymenia, (hī-men'i-a). Plural of Hymenium, *q v.*

Hymenium, (hī-men'i-um). [Gk. *hymen*, membrane.] The fruit bearing surface of fungi, as on the under side of a mushroom; usually somewhat membraneous.

Hymenocaris, (hī-men-ok'a-ris). [Gk. *hymen*, membrane; *karis*, shrimp.] A phyllopod crustacean animal, found only in Lingula flags.

Hymenomycetes, (hī-men-o-mī-sē'tēz). [Gk. *hymen*, membrane; *mykes*, mushroom]= Toadstools, mushrooms, &c.: plants, forming a primary division of Fungales, having the mycelium in the ground; the receptacle is the visible part.

Hymenophore, (hī'men-o-fōr). [Gk. *hymen*, membrane; *phoreo*, I bear.] The combined stem and pileus, as in mushrooms.

Hymenophyllaceæ, (hī-men-ō-fil-lā'se-ē). [Hymenophyllum, *q.v.*] A family of ferns, *q.v.*

Hymenophyllum, (hī-men-ō-fil'lum). [Gk. *hymen*, membrane; *phyllon*, leaf.]=Filmy-fern: a plant, the type of Hymenophyllaceæ, named from its pellucid fronds.

Hymenoptera, (hī-men-op'ter-a). [Gk *hymen*, membrane; *pteron*, wing.] Bees, ants, &c.: insects with four membraneous wings; very numerous, and mostly small; mandibles and maxillæ for mastication; complete metamorphosis females have a sting; includes 3000 species.

Hyocholeic acid, (hī-o-kol'ik). [Gk. *hys*, pig; *chole*, bile.] $C_{27}H_{45}NO_6S$: an acid, containing sulphur, obtained from pig's bile.

Hyocholic acid, (hī-o-kol'ik). [Gk. *hys*, pig; *chole*, bile] $C_{27}H_{42}NO_5$: an acid obtained from pigs' bile.

Hyodyslysin, (hī-ō-dis'lis-in). [Gk. *hys*, pig; Dyslysin, *q.v.*] $C_{50}H_{76}O_6$: a resinous substance derived from hyocholic acid.

Hyoglossal, (hī-ō-glos'sal). [Hyoid and Glossal.] *H. membrane:* connects tongue and hyoid bone. *H. muscle:* connects tongue and hyoid bone.

Hyoid, (hī'oid). [The Greek letter Υ; *eidos*, form.]=Lingual bone: a bone, supporting the tongue, which in man has somewhat the shape of the letter U.

Hyoidean, (hī-oid'e-an). [Hyoid, *q.v.*] *H. arch:* in the skull. *H. nerve:* a division of the glossopharyngeal nerve.

Hyopotamus, (hī-ō-pot'a-mus). [Gk. *hys*, hog: *potamus*, river.]=Ancodus=Cyglognathus= Bothriodon=Anthracotherium: a hog-like animal with four digits on each limb, known by fossil remains, teeth, in Lower Miocene.

Hyoscine, (hī'ō-sin). [Gk. *hys*, pig.] $C_6H_{13}N$: an amine obtained from hyoscyamine; an oily liquid.

Hyoscyamine, (hī-os-sī'a-min). [Hyoscyamus, *q.v.*] An alkaline principle obtained from the plant Hyoscyamus.

Hyoscyamus, (hī-ōs-sī'a-mus). [Gk. *hys*, hog; *kyamos*, bean.] = Henbane: a poisonous herb, belonging to Solanaceæ.

Hypapophyses, (hī-pa-pof'i-sēs). [*Hypo*, under; Apophysis, *q.v.*] Ventral processes from the body of the vertebræ. *v.* Skeleton.

Hypaxial, (hī-paks'i-al). [Gk. *hypos*, under; Axis, *q.v.*] Processes below the centre of the vertebral column.

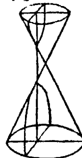
Hyper, (hī'per). [The Greek word.] A prefix implying above or excess.

Hyperæsthesia, (hī-per-ēz-thē'si-a). [Hyper, *q.v.*; *aisthesis*, feeling.] Excessive sensibility, induced by chloral hydrate, &c.

Hyperanthera, (hī-per-an'ther-a). [Hyper and Anther, *q.v.*] A sub-genus of Moringa, *q.v.* *H. moringa*: horse-radish tree.

Hyperapophyses, (hī-per-a-pof'i-sēz). [Hyper and Apophysis, *q.v.*] Processes in the vertebræ, extending from one vertebra to the next; not found in man.

Hyperbola, (hī-per'bol-a). [Hyper, *q.v.*; Gk. *ballo*, I throw.] One of the conic sections: a curve in which the distance of any point from a given point called the focus is greater, in a given ratio, than its distance from a given line called the directrix.


Hyperbola.

Hyperboloid, (hī-per'bō-loid). [Hyperbola, *q.v.*: Gk. *eidos*, form.] A solid figure formed by the revolution round its axis of an hyberbola.

Hypericaceæ, (hī-per-i-kā'se-ē). [Hypericum, *q.v.*]=Tutsans: resinous plants, belonging to Guttiferales.

Hypericum, (hī-per'i-kum). [*Hyperikon*, the Greek name.]=St. John's Wort: a plant, the type of Hypericaceæ. *H. androsæmum*= Tutsan.

Hyperion, (hī-pē'ri-on). [Classical.] One of the satellites of Saturn.

Hyperodapedon, (hī-per-ō-dap'e-don). [Hyper, *q.v.*; Gk. *odous*, tooth; *dapedon*, pavement.] A land reptile-like animal, having many palatal teeth, remains of which are found in Upper Trias and Upper Elgin Standstone.

Hyperodon, (hī-per'o-don) = Bottle-nosed whale, &c. *v.* Hyperoodon.

Hyperoodon, (hī-per-ō'o-don). [Gk. *hyperoa*, palate; *odous*, tooth.]=Bottle-nosed whale =Balæna rostrata. *v.* Whale.

Hypersthene, (hī'pers-thēn). [Hyper, *q.v.*; *sthenos*, strength.] A variety of pyroxene; resembling hornblende; a mineral, chiefly composed of silicates of iron and magnesia. *H. rock*: contains labradorite and hypersthene.

Hypertrophied, (hī-per'trō-fid). [Hyper, *q.v.*; *trophe*, food.] Overgrown: enlarged unduly from excess of food.

Hyperuric acid, *v.* Uric acid.

Hyphæ, (hī'fē). [Gk. *hypha*, web.] Cells in fungi and lichens: growing apically; having no chlorophyll.

Hyphæne, (hī-fēn). [*Hyphaino*, to entwine.] =Gingerbread tree, doom-palm: a tree belonging to Palmaceæ.

Hyphepus, (hī'fe-pus) [Gk. *hypha*, web; *pous*, foot.] An extinct lizard.

Hyphomycetes, (hī-fō-mī-sē'tēz). [Gk *hypha*, web; *mykes*, mushroom.]=Moulds. a primary division of Fungales, chiefly filamentous, with spores at the extremities. *v.* Botrytaceæ.

Hypnotic, (hip-not'ik). [Gk. *hypnos*, sleep.] Inducing sleep: soporific.

Hypo, (hī'pō). [Gk. *hypo*, under, below.] A prefix, implying a less degree, inferior position, or smaller quantity.

Hypoblast, (hī'pō-blast). [Gk. *hypo*, under: *blastos*, sprout.] The inner layer of the cells of blastoderm.

Hypobranchials, (hī-pō-brang'ki-alz). [Hypo and Branchial, *q.v.*] The lower portion of the branchial arches, or supports of the gills in fishes.

Hypobromous acid, (hī-pō-brō'mus) [Hypo and Bromine, *q.v.*]=HBrO: an unstable acid.

Hypochæris, (hī-po-kē'ris). [Hypo, *q.v.*, Gk. *choiras*, pig.]=Cat's ear: an herb, belonging to Asteraceæ.

Hypochloric acid, (hī-pō-klō'rik.) [Hypo and Chloric, *q.v.*] ClO_2=Peroxide of chlorine.

Hypochlorites, (hī-pō-klō'rits). [Hypo and Chlorite, *q.v.*] Compounds of hypochlorous acid with bases.

Hypochlorous acid, (hī-pō-klō'rus). [Hypo and Chlorous, *q.v.*]=HClO=Hydric hypochlorite: a pale yellow liquid of acrid taste.

Hypochondriac, (hī-pō-kon'dri-ak). [Gk. *hypo*, under, *chondros*, cartilage.] The region of the abdomen on each side of, and below the stomach.

Hypochthon, (hī-pok'thon)=Proteus, *q.v.*

Hypoclinea, (hī-pō-klī'ne-a). An ant, the young of which is preyed on by Eciton, *q.v.*

Hypocotyledones, (hī-pō-kot-i-lē'donz). [Hypo and Cotyledon, *q.v.*]=Hypovitellians: Van Beneden's term for Vertebrata.

Hypocrateriform,(hī-po-krā'ter-i-form). [Hypo and Crater, *q.v.*]=Salver-shaped.

Hypocycloid, (hī-pō-sī'kloid). [Hypo and Cycloid, *q.v.*] The curve traced by a point in the circumference of a circle, when rolling upon the concave arc of another circle.

Hypodermiæ, (hī-pō-der'mi-ē). [Hypo and Derma, *q.v.*] *v.* Fungi, Bach's classification of.

Hypogæi, (hī-pō-jē'i). Subterranean puff-ball fungi, belonging to Gasteromycetes.

Hypogallic acid, (hī-pō-gal'lik). [Hypo and Gallic, *q.v.*] $C_7H_6O_4$. *v.* Gallic acid.

Hypogastric, (hī-pō-gas'trik). [Hypo and Gastric, *q.v.*] Under the stomach. *H. plexus*: a union of sympathetic nerves in the pelvis.

Hypogeic acid, (hī-pō-jē'ik). [Hypo and Geic, *q.v.*] An acid obtained from the oil of ground-nut.

Hypogene rocks, (hī'pō-jēn). [Gk. *hypo*, under; *ginomai*, born.] Granite, gneiss, &c., rocks, formed below the surface: also called primary, primitive, and crystalline: divided

into *plutonic rocks* and *crystalline schists*: never above fossiliferous or volcanic rocks.'

Hypoglossal (hī-pō-glos'sal). [Hypo and Glossal, *q.v.*] Below the tongue. *H. nerve*=The ninth nerve: serving the tongue and larynx.

Hypogynous, (hī-poj'i-nus). [Gk. *hypo*, under; *gyne*, female.] Used of flowers, when the receptacle is raised above the stamen, and the stamens are quite free.

Hyponitric acid, (hī-pō-nī'trik). [Hypo and Nitric, *q.v.*]=N_2O_4=Nitric peroxide.

Hyponome, (hī-pon'ō-me). [Gk. *hyponomous*, underground.] An animal belonging to Echinodermata: found in Australia, and representing the otherwise extinct Cystoidea.

Hypophosphorous acid. PH_3O_2=Hydric hypophosphite: a syrupy liquid.

Hypophysis, (hī-pof'i-sis). [Gk. *hypo*, below; *physos*, growth.] A cell which afterwards becomes the root, as in Angiosperms.

Hypostome, (hī'pos-tōm). [Gk. *hypo*, under; *stoma*, mouth]=Lip-plate=Labrum: the plate in front of mouth, as in trilobites.

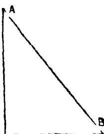
Hyposulphuric acid, (hi-pō-sul-fū'rik). [Hypo and Sulphuric, *q v.*]=$H_2S_2O_6$=Dithionic acid=Dihydric dithionate. *v* Sulphuric acid.

Hyposulphurous acid, (hi-pō-sul-fū'rus). [Hypo and Sulphurous, *q v.*] $H_4S_2O_4$=Dithionous acid. *v.* Sulphuric acid.

Hypotamidæ, (hī-pot-am'i-de). An extinct family of Ungulates.

Hypothecium, (hi-pō-thē'si-um). [Gk. *hypo*, under; *theke*, cell] The mass of fibres below the sub-hymenial layer of some lichens

Hypothenuse, (hi-pot'ē-nūs). [Gk. *hypo*, below; *teinein*, to stretch.] The side of a right angled triangle which is opposite to the right angle.



AB. Hypotenuse.

Hypothesis, (hī-poth'ē-sis). [The Greek word.]=Supposition: an assumption, made as the basis of a discussion.

Hypotrochoid, (hi-pō-trok'-oid). [Gk. *hypo*, under; *trochos*, wheel.] The curve traced by a point in a circle, but not in the circumference, as it rolls on the concave arc of another circle. *cf.* Hypocycloid.

Hypovitellians, (hī-pō-vī-tel'li-anz)=Hypocotyledones, *q.v.*

Hypoxanthine, (hī-poks-an'thīn)=$C_5H_4N_4O$. *v.* Xanthine.

Hypoxidaceæ, (hī-poks-i-dā'se-ē). [Hypoxis, the typical genus.]=Hypoxids: tropical herbaceous plants, with tuberous roots and linear leaves, belonging to Narcissales.

Hypoxyla, (hī-poks-ī'la). [Gk *hypo*, less; *xyle*, wood.] A name suggested for the fungi that resemble lichens.

Hypsilophodon, (hip-si-lof'o-don). [Gk. *hypsos*, height, *lophos*, hill; *odous*, tooth] An animal belonging to Dinosaurus, but resembling the Iguanodon.

Hypsiprymnus, (hip-si-prim'nus). [Gk. *hypsos*, height, *prymnos*, extremity.] Kangaroo-rat. a small nocturnal kangaroo-like animal.

Hypsodon, (hip'so-don). [Gk. *hypos*, height; *odous*. tooth.] A fish, known by fossil remains in Chalk and London clay rocks.

Hypsometer, (hip som'e-ter). [Gk. *hypos*, height, Meter, *q.v.*] An instrument for the measurement of heights by hypsometry.

Hypsometry, (hip-som'e-tri). [Gk. *hypsos*, height; Meter, *q.v.*] The measurement of heights, by the determination of the boiling point of water, or by other means.

Hyracoidea, (hī-ra-koi'de-a). [Gk. *hyrax*, shrew; *eidos*, form.]=Hyrax: small gregarious animals, forming a primary division of Mammalia.

Hyracotherium, (hī-ra-kō-thē'ri-um). [Hyrax, *q.v* ; Gk. *therion*, beast.] A hog-like animal, known by fossil remains found in Lower Eocene, and London clay.

Hyrax, (hī'raks). [The Greek name.]=Dayman: a small tail-less herbivorous quadruped, the type of Hyracoidea. *H. capensis* =Cape badger.

I.

Ianthe, (ī-an'thē). [Classical.] No. 98 of the Minor Planets.

Iapetus, (ī-ap'e-tus). [Classical.] A star.

Iatric, (ī-at'rik). [Gk. *iatrikos*, healing.] Relating to medicine, or medical men.

Iatro-chemist, (ī-ā-tro-kem'ist). [Iatric, *q.v.*] A physician who is also a chemist.

Iberis, (ī-bē'ris). [Iberia, in Spain.]=Candy tuft: an herb belonging to Brassicaceæ.

Iberite, (ī'bęr-īt). 1. A mineral: a variety of Iolite. 2=Gigantolite.

Iberian, (ī-bē'ri-an). [Iberia, in Spain.] *I. floral region:* characterised by humidity and evergreen plants

Ibex, (ī'beks). [The Latin name.]=Capra ibex: an animal of the goat kind; found in the Alps and other mountainous parts of Europe.

Ibis, (ī'bis). [The Latin name.] A bird, remarkable for beautiful colours and long bill, found in warm countries; belongs to Grallatores. *I. religiosa:* sacred Ibis. *v.* Tantalinæ.


Ibis.

Ibla, (ib'la). Small crustacean animal, belonging to Cirrhopoda; the male is an internal parasite on female.

Ice, (is) [*Is*, the A.-S. word.]=Frozen water: a mineral, which crystallises in hexagonal stellate

forms. *v.* Water. *I. age*=Glacial epoch. *Iceberg:* pieces of ice, sometimes miles in length, floating about in Polar seas; broken off glaciers when these reach deep water; *v* Berg. *I. blink*=Glacier. *I. plant*=Mesembryanthemum crystallinum.

Iceland, (is'länd). *I. spar:* a crystalline variety of calcite; causes double refraction of li... named from having been found in Ic... *I. moss*=Cetraria islandica, from wh... Lichenin is obtained.

Ichneumon, (ik-nū'mon). [Gk. *ichneumon,* tracker.] = Viverra ich:=Herpestes ich: a small carnivorous mammalian animal, somewhat resembling the civet; named from its habit of following the crocodile, &c. *I. flies*=Ichneumonidæ: insects belonging to Hymenoptera, including several genera; larvæ parasitic on other insects.

Ichneumon.

Ichnites, (ik-nī'tēz). [Gk. *ichnos,* footstep.] Fossil traces of footmarks. *v.* Lithichnozoa.

Ichnocarpos, (ik-nō-kär'pos). [Gk. *ichnos,* trace; *karpos,* fruit.] A plant, belonging to Apocynaceæ.

Ichnolithology,(ik-nō-lith-ol'o-ji). [Gk. *ichnos,* track; *logos,* discourse.]=Ichnology: science of fossil footmarks. *v.* Lithichnozoa.

Ichthin, (ik'thin). [Gk. *ichthys,* fish.] A nitrogenous constituent of fish-eggs.

Ichthyocolla, (ik-thi-ō-kol'la). [Gk. *ichthys,* fish, *kolla,* glue.]=Fish glue = Isinglass, *q.v.*

Ichthyodorulites, (ik-thi-ō-dor'ō-līts). [Gk. *ichthys,* fish; *dory,* spear; *lithos,* stone.] Large bony fin-spines, found fossil in the Lias.

Ichthyolites, (ik'thi-ō-līts). [Gk. *ichthys,* fish; *lithos,* stone.]=Fossil fishes: fossil remains of fishes.

Ichthyology, (ik-thi-ol'ō-ji). [Gk. *ichthys,* fish.] Natural history of fishes. *v.* Zoology.

Ichthyomorpha,(ik-thi-ō-mor'fa). [Gk. *ichthys,* fish; *morphe,* shape.]=Urodela, *q.v.* Newts, &c: amphibious animals; also called tailed-amphibia.

Ichthyophis, (ik'thi-o-fis). [Gk. *ichthys,* fish; *ophis,* serpent.] A fish, belonging to Gymnophiona; named from its snake-like form.

Ichthyophthalmite, (ik-thi-of-thal'mit). [Gk. *ichthys,* fish; *ophthalmos,* eye.]=Apophyllite, *q.v.*

Ichthyophthira, (ik-thi-of-thī'ra). [Gk. *ichthys,* fish; *phtheir,* louse.]=Epizoa: small crustaceans, the adult forms of which are found parasitic on fishes; probably belong to Copepoda; a sub-division of Crustacea.

Ichthyopsida, (ik-thi-op'si-da). [Gk. *ichthys,* fish; *opsis,* appearance.] A primary division of vertebrate animals, including fishes and amphibia, have branchiæ (temporary or permanent), nucleated blood corpuscles, but no amnion nor allantois. *v.* Vertebrata.

Ichthyopterygia, (ik-thi-op-ter-ij'i-a). [Gk. *ichthys,* fish; *pteryx,* wing.]=Ichthyosauria, *q.v.* *v.* Enaliosauria.

Ichthyornidæ, (ik-thi-or'ni-dē). [Ichthyornis, *q.v.*] Fossil birds, of which Ichthyornis is the type.

Ichthyornis, (ik-thi-or'nis). [Gk. *ichthys,* fish; *ornis,* bird.] A bird having teeth, known by fossil remains, found in Upper Cretaceous rocks of Kansas, in 1872.

Ichthyornithes=Ichthyornidæ, *q.v.*

Ichthyosauria, (ik-thi-ō-saw'ri-a). [Ichthyosaurus, *q.v.*] = Fish-lizards: extinct aquatic and carnivorous reptiles, several species of which are known by fossil remains, found in Secondary strata, especially in Lias; with limbs developed into paddles.


Ichthyosauria.

Ichthyosaurus, (ik-thi-ō-saw'rus). [Gk. *ichthys,* fish; *sauros,* lizard.] A large marine reptile, known only by fossil vertebræ and other bones, found in Oolite rocks.

Ichthyotomy, (ik-thi-ot'o-mi). [Gk. *ichthys,* fish; *tome,* section.] Anatomy of fishes. *v.* Zootomy.

Icica, (ī'si-ka) A resinous plant, belonging to Amyridaceæ.

Icicane, (ī'si-kān). [Icica, *q.v.*] A resin, obtained from Icica.

Icosahedron, (ī-ko-sa-hē'dron). [Gk. *eikosi,* twenty; *hedra,* base.] A regular solid figure, having twenty faces.

Icosandria, (ī-kos-an'dri-a). [Gk. *eikosi,* twenty; *aner,* man.] Plants having twenty or more stamens. *v.* Linnean classification.

Ideoelectrics, (id-e-ō-el-ek'triks). Substances such as sulphur, amber, &c., which can be electrified by friction. (Obsolete.)

Ideographic, (id-e-ō-graf'ik). [Gk. *idea,* figure; *grapho,* I write.] Hieroglyphic writing: writing by means of descriptive symbols.

Idocrase, (id'ō-krās). [Gk. *eidos,* form; *krasis,* mixture.]=Vesuvianite: a mineral of the garnet group; a silicate of alumina, lime, and iron, crystallising in pyramids.

Idothea, (ī-doth'e-a)=Box-slater: a crustacean animal belonging to Isopoda.

Idrialite, (id'ri-a-līt). [Idria.] A combustible mineral; an impure variety of cinnabar, named from being found in the mines of Idria.

Igasurine, (ig-a-sū'rin). An alkaloid principle found in Nux-vomica; probably=Brucine.

Iglite, (ig'līt)=Arragonite, *q.v.*

Ignatia, (ig-nā'shi-a). A plant belonging to Loganiaceæ. *I. amara:* St. Ignatius's beans.

Igneous, (ig'ne-us). [L. *ignis,* fire.] Produced by fire: related to, or connected with, the action of fire. *I. rocks*=Fused rocks: granite, syenite, trap, basalt, trachyte, lavas, and volcanic rocks.

Ignis fatuus, (ig'nis fat'ū-us). [The Latin name.] A meteor, seen in marshy districts: possibly ignited phosphoretted hydrogen.

Ignition, (ig-nish'un). [L. *ignis,* fire.] Rendering a solid luminous by the application of heat.

Iguana, (ig-wä'na). [The Spanish name.]=

Lacerta: an herbivorous reptile found in America. *v.* Iguanidæ.

Iguanidæ, (ig-wan'i-dē). [Iguana, *q.v.*; Gk. *eidos,* form.] A family of herbivorous reptiles, found in warm countries. *New World I.*=Pleurodonta. *Old World I.*=Acrodonta.

Iguanodon, (ig-wăn'ō-don). [Iguana, *q.v.*; Gk. *odous,* tooth.] A large herbivorous reptile, found in Wealden, belonging to Dinosauria, which appears to have walked on the hind legs. *v.* Dinosauria.

Ileo-cæcal, (il-e-ō-sē'kal). [Ileum, *q.v.*; Gk. *koilia,* belly.] *I. valve:* at the junction of the small and large intestines.

Ileo-colic, (il-e-ō-kol'ik). [Ileum and Colon, *q.v.*] Connected with, or relating to, the ileum and colon.

Ileum, (ī'le-um). [Gk. *eileō,* to twist.] The portion of the small intestines which communicates with the larger intestine.

Ilex, (ī'leks). [The Latin name.]=Holly: a tree, with pointed leaves, belonging to Aquifoliaceæ. *Quercus I.*=Evergreen oak.

Ilfracombe group—Middle Devonian rocks belonging to Devonian formation, *q.v.*

Iliac, (il'i-ac). [Ilium, *q.v.*] *I. artery:* supplying blood to pelvis and lower limbs. *I. fossa:* a depression on the inner surface of the ilium. *I. veins:* bring blood from the pelvis and lower limbs.

Ilicic acid, (ī'lis-ik). [Ilex, *q.v.*] An acid obtained from the holly.

Ilicineæ, (ī-lis-in'e-ē). [Ilex, *q.v.*]=Aquifoliaceæ, *q.v.*

Ilium, (il'i-um). [The Latin name.] A portion of the os innominatum: named from supporting the ilia, or flanks.

Illecebraceæ, (il-les-e-bră'se-e). [Illecebrum, *q.v.*]=Knotworts: herbs with very small flowers, belonging to Silenales.

Illecebrum, (il-les'e-brum). [L. *illicio,* I allure.]=Rush grass=Knot-grass: a small herb, with small white flower, belonging to Illecebraceæ.

Illicieæ=Magnoliaceæ, *q.v.*

Illicium, (il-lis'i-um). [L. *illicio,* I allure.]=Aniseed tree: a plant belonging to Winteraceæ.

Illigeraceæ=Combretaceæ, *q.v.*

Ilmenic acid, (il'men-ik). [Ilmenite, *q.v.*] Probably impure niobic acid.

Ilmenite, (il-men-it). [Ilmen Mountains.] A mineral, chiefly titanate of iron. 1=Menaccanite. 2=Mengite.

Ilmenium, (il-mē'ni-um). [Ilmenite, *q.v.*] An hypothetical metal supposed to have been the base of ilmenic acid.

Ilvaite, (il'vīt). [The Latin name of Elba.] A mineral, chiefly silicate of iron, calcium, &c.

Image. *Virtual I.:* the apparent image seen behind a mirror. *Real I.:* that formed in front of a mirror where the reflected rays converge. *Multiple Is.:* formed by reflection and re-reflection in two mirrors, as in kaleidoscope. *Accidental Is.:* seen after a bright object has been for some time looked at; they are of the same form as the object and have the complementary colours.

Imago, (i-mā'gō). [The Latin word.] The perfect insect. *v.* Insect.

Imasatic acid=Isamic acid.

Imasatin, (i-mă'sa-tin). [Isatin, *q.v.*] $C_{16}H_{11}N_3O_3$: a substance obtained from action of ammonia on isatin.

Imbricated, (im-bri-kā'ted). [L. *imbrex,* tile.] Folded over at the edges; overlapping.

Imides, (im'īdz). [Amide, *q.v.*] Compounds intermediate between amides and nitriles=Amidated acids from which the elements of water have been removed; monamides in which two of the hydrogen atoms are replaced by dyad radicles.

Imide bases=Imidogen bases, *q.v.*

Imidogen, (im-id'ō-jen). [Imide, *q.v.*; Gk. *gennaō,* I produce.]=HN=Ammonia − H_2: an hypothetical compound existing in imides. *I. bases*=Secondary monamines, ammonia in which two equivalents of hydrogen have been replaced by hydrocarbons. *v.* Organic bases.

Imitative minerals. Globular, mammillary, botryoidal, &c. *v.* Minerals.

Immersion, (im-mer'shun). [L. *immergo,* I dip into.] The disappearance of an eclipsed body.

Impatiens, (im-pā'si-enz). [The Latin name.] Balsam: an herb belonging to Balsaminaceæ. *I. noli-me-tangere*=Yellow balsam.

Imperforata, (im-per-fō-rā'ta). [L. *in,* not; *perforo,* I pierce.] A division of Foraminifera, including all those having no apertures in the walls of the shell.

Imperial. *I. gallon:* 277¼ cubic inches; the volume of 10 lbs. of distilled water. *I. yard:* 36 inches, the standard of length in Britain. *v.* Standards.

Implacentata, (im-pla-sen-tā'ta). [L. *in,* not; Placenta, *q.v.*]=Implacentalia: Owen's term for Marsupialia and Monotremata, in which the placenta is not developed. *v.* Mammalia.

Inachus, (in'a-kus). [Classical.] *I. Kæmpferi:* the largest crustacean known, covers more than 20 square feet of ground, belongs to Decapoda.

Inactive bodies. Those that do not affect polarised light, nor cause chemical action.

Inarticulata, (in-ār-tik-ū-lā'ta). [L. *in,* not; *articulus,* joint.] A sub-division of Brachiopoda in which the mantle is in two separate lobes.

Incandescent, (in-kan-des'sent). [L. *incandesco,* I glow.] Glowing: luminous from heat.

Incendiary projectiles. Carcass, ball, smoke-ball, &c.: projectiles which inflame when discharged; intended to set fire to houses, &c.

Inch, (insh). [*Ince,* the A.-S. word.] $\frac{1}{36}$ of a yard, *q.v.*

Incineration, (in'sin-er-ā'shun). [L. *incinero,* I burn to ashes.] To drive off by heat all volatile and combustible constituents of a substance; to reduce to ashes.

Incisor, (in-sī'zor). [L. *incido,* I cut.] *I.-teeth,* cutting-teeth: the front teeth, with sharp chisel-like edges. *v.* Teeth.

Inclination, (in-kli-nā'shun). [L. *inclino,* I bend.]=Dip=Magnetic inclination, *q.v.* *I.*

compass: used to measure the magnetic inclination at any given place.

Inclined, (in-klīnd'). *I. plane:* a gradual ascent. *v.* Mechanical powers. *I. strata:* those that lie at an angle with the horizon.

Incompletæ, (in-kom-plē'tē). [The Latin word.] [illegible]petalæ, *q.v.*: a sub-division of Dic[illegible]dons in Fries's classification of pl[illegible].

Incus, (in'kus). [L. *incus*, anvil.] One of the bones in the tympanic cavity of the ear.

Indecidua, (in-dē-sid'ū-a). [L. *in*, not; *deciduus*, falling.] A primary division of placental mammalia, including Edentata, Ungulata, Cetacea, &c., in which the placenta is indeciduous. *v.* Placenta.

Indehiscent, (in-de-his'sent). [L. *in*, not: *dehisco*, I gape.] Not opening, used of fruits such as the nut and berry.

Indeterminate, (in-de-ter'min-ãt). [L. *in*, not; *determino*, I limit.] Uncertain: not capable of exact definition.

Index, (in'deks). [The Latin word.] 1. A pointer. 2. The number showing to what power any given number is to be raised.

Ex. In m^3, 3 is the index; in $x^{\frac{2}{3}}$, $\frac{2}{3}$ is the index. *I. finger*=Fore-finger. *I. of refraction.* *v.* Refraction.

Indian, (in'di-an). [India.] *I. badger*=Ursus Indicus. *I. bay*=Laurus Indica. *I. berries*=Cocculus Indicus. *I. blue*=Nymphæa cyanea. *I. bread*=Lycoperdon cervinum. *I. camphor*=Dryobalanops camphora. *I. cedar*=Cedrus deodara. *I. copal*=Vateria Indica. *I. corn*=Maize=Zea mays: cultivated by native Indians of America. *I. cress*=Tropæolum. *I. cucumber*=Medeola Virginica. *I. date*=Tamarindus Indica. *I. fig*=Opuntia. *I. figs*=Cactaceæ. *I. fire*=A compound of nitre, realgar, and sulphur. *I. hawthorn*=Raphiolepis. *I. hemp*=Cannabis Indica. *I. ink*=A pigment, probably compounded of gelatin and camphor. *I. lace-tree*=Lagetta lintearia. *I. lotus*=Nymphæa lotus. *I. madder*=Hedyotis. *I. millet*=Sorghum vulgare. *I. mulberry*=Morinda and Morus Indica. *I. ox*=Bos Indicus. *I. rubber*=Caoutchouc. *I. salt*=Saccharum officinale. *I. serpents:* change skin several times each year. *I. shot*=Canna Indica. *I. soap*=Sapindus saponaria. *I. tobacco*=Cannabis Indica. *I. tortoise*=Testudo Indica. *I. yellow*=Euxanthate of magnesium.


Indian-corn

Indianite, (in'di-a-nit). An Indian variety of Anorthite, *q.v.*

Indican, (in'di-kan). [Indigo, *q.v.*] A yellow liquid found in indigo, urine, blood, &c.,

Indices, (in'dī-sēz). Plural of Index, *q.v.*

Indiction, (in-dik'shun). [L. *indictio*, declaration.] A period of time=15 years. 1st. I. commenced first day of 313 A.D.

Indicolite, (in-di-kō'lit). A blue variety of Tourmaline, *q.v.*

Indigenous, (in-dij'e-nus). [*Indigena*, the Latin word.] Native: original inhabitants or products of any given district.

Indigo, (in'di-gō). [The French word.] = C_8H_5NO: a blue dye-stuff obtained from various plants, and especially from Indigofera. *Blue I.*=Indigotin, *q.v.*=Indyl. *White I.*=Indigogen, *q.v.* *I. copper*=Covellite.

Indigofera, (in-di-gof'er-a). [Indigo, *q.v.*: L. *fero*, I bear.] A plant belonging to Fabaceæ.

Indigogen, (in-di-gō'jen) [Indigo, *q.v.*: Gk. *gennao*, I produce.] C_8H_6NO=White indigo=Indyl hydride=Deoxidised indigo.

Indigotic acid, (in-di-gō'tik). [Indigo, *q.v.*]=Nitro-salicylic acid, *q.v.*

Indigotin, (in-di-gō'tin). [Indigo, *q.v.*]=Blue indigo=Indyl, contains the colouring matter of indigo.

Indin, (in'din). [Indigo, *q.v.*]=$C_{16}H_{10}N_2O_2$=In_2=Di-Indyl: a rose-coloured substance obtained from isatin. *v.* Indyl. *Hydrindin:* obtained from action of potash on Indin.

Indirubin, (in-di-ru'bin). [Indigo, *q.v.*, L. *ruber*, red.] Probably=Indigo red: a pigment.

Indium, (in'di-um). [Indigo, *q.v.*]=In=A white, malleable, easily-fused metal found in zinc-blende, named from the indigo portion of its spectrum, in which are distinctive lines.

Individual. 1. The total result of the development of a single ovum. 2. Any centre or axis capable of independently adjusting its inner and outer relations. 3. Each aphis, each polype, each bud of a plant, whether detached or fixed.

Indrisinæ, (in-dris'i-nē). A division of Lemuroidea, named from Indris, the typical genus.

Induced, (in-dūsd'). [L. *induco*, I lead in.] Caused by induction, *q.v.* *I. current:* excited by the presence of a primary current. *I. magnetism:* produced in soft iron when a magnet is held near, or a wire, through which a current is passing, is coiled round it.

Induction, (in-duk'shun). [*Inductio*, the Latin word.] The influence of an electrified body on another body, not electrified, placed near, but not in contact, probably by the polarization of the intervening medium.

Inductorium, (in-duk-tō'ri-um)=Ruhmkorff's coil, *q.v.*

Indus. An unimportant southern constellation.

Indusial, (in-dū'si-al). The fossilised remains of indusia. *I. limestone:* possibly of fossil caddis-worms.

Indusium, (in-dū'si-um). Any small covering, such as for the stigma of a plant, the wing of an insect, &c.

Indyl, (in'dil). [Indigo, *q.v.*; Gk. *hyle*, material.] = In = Indigotin = Blue indigo: C_8H_5NO: the radicle of the indigo series. *I. hydride* = White indigo. *I. hydrate* = Isathyd. *I. oxide*=Isatin. *Di I.*=Indin.

Indyle=Indigo-blue=Indyl, *q.v.*

Ineducabilia, (in-ed-ū-kā-bil'i-a). A primary division of Vertebrata. *v.* Bonaparte's classification.

Inertia, (in-ĕr'shi-a). [The Latin word.]=The property of matter to move or remain at rest according as it is acted on by external forces, which it has no innate power to oppose.

Infection, (in-fek'shun). [L. *inficio*, I taint.] Communication of disease, without contact, through the medium of the air, distinct from contagion, which is caused by contact.

Inferior Oolite. A bed of calcareous stone and shales; the lowest bed of the Oolite, *q v.*

Inferobranchiata, (in-fer-ō-brang-ki-ā'ta). A sub-division of Gasteropoda, named from the inferior position of the branchiæ.

Infiltration, (in-fil-trā'shun). One method of fossil formation: in which the pores of an organic body are gradually filled by carbonate of lime, or some other mineral, so that the form and character is preserved.

Inflammable minerals=Sulphur, Coal, Naphtha, Petroleum, Asphalt, Graphite, Diamond, &c. *v.* Minerals.

Inflection, (in-flek'shun). [L. *inflecto*, I bend.] Bending, as of a ray of light, sound, heat, &c

Inflorescence, (in-flō-res'sens). [L. *floresco*, I begin to flower.] The manner of arrangement of the flowers of plants. *Classification of I.*—

Spike—
Catkin.
Spadix.
Raceme—
Corymb.
Panicle.
Head or Capitulum—
Umbel.
Cyme.

Infundibulum, (in-fun-dib'ū-lum). [The Latin word.] Funnel: any funnel-like process, such as the channel by which the mollusca discharge water from their branchial chambers. *I. of brain:* a small process of the gray matter of the brain. *I of ethmoid:* a canal. *I. of ear:* the termination of the cochlea. *I. of heart:* a conical prolongation from which the pulmonary artery proceeds.

Infusoria, (in-fū-sō'ri-a). [L. *infusum*, infusion.] A division of Protozoa: microscopic animals, usually found in vegetable infusions, of which Paramœcium is the type; also considered to be a primary division of the animal kingdom, chiefly because of the peculiar nature of their reproductive organs: have homogenous gelatinous diaphanous bodies, and swim by means of cilia. *Classification of I.* by Ehrenberg—

Polygastrica—
Astoma.
Stomatoda.
Rhizopoda.
Rotifera.

Ingesta, (in-jes'ta). [L. *ingero*, I carry in.] A collective term for all that enters; used as=Food.

Ingrassias, (in-gras'si-as). [Signor I., an Italian physician.] *Processes of I.*=Lesser wings of sphenoid.

Inguen, (ing'gwen). [The Latin name.]=Groin: the lower part of the abdomen.

Inguinal, (ing'gwin-al). [Inguen, *q v.*] Connected with or related to the groin. *I. canal* =Spermatic canal.

Inheritance, (in-her'i-tans) = Transmission from parent to child. *Abridged I.:* the imperfect succession of developments which take place in the embryos of higher animals, in which some stages appear to be omitted. *Amphigonous I.:* dual transmission; inheritance of qualities from both parents. *Homochronous I.*=Contemporaneous transmission; shown by the stages of development occurring in the offspring at the like times as in the parent. *Homotopic I.:* shown by the development of similar features and peculiarities of person in offspring as in parent.

Ink. *Indian I.*=*China I.:* made from a black liquid obtained from the Loligo; also a compound of camphor and gelatin. *Printer's I.:* a compound of finely divided carbon and oil. *Sympathetic I.:* visible only when dried by heat, otherwise invisible from absorbed moisture.

Innervation, (in-ner-vā'shun). [Nerve, *q.v.*] The function of the nervous system, *q.v.*

Innominate, (in-nom'i-nāt). [L. *innominatum*, unnamed.] *I. artery:* goes from aorta to right side of head and right arm; divides into carotid and subclavian arteries. *I. bone*=Haunch bone: in lower animals, three distinct bones, ilium, pubis, and ischium. *I vein:* formed by the union of the jugular and subclavian veins. The two I. veins continue to form the superior vena-cava.

Inoceramus, (ī-nō-ser'a-mus). [Gk. *is*, fibre; *keramos*, tile.] A bivalve mollusc, many species of which are found in Cretaceous rocks.

Inoculation, (in-ok-ū-lā'shun). [L. *inoculo*, I graft.] 1. Used generally for any method of grafting by the insertion of buds. 2. A method of mitigating the danger of small-pox by inducing a mild form of it: superceded by Vaccination, *q.v.*

Inophyta, (in-of'i-ta). [Gk. *is*, fibre; *phytos*, planted.]=Thread plants, lichens, and fungi: a sub-division of Thallophytes, *q.v.*

Inosic acid, (i-nō'sik). [Gk. *is*, fibre.]= $C_5H_8N_2O_6$: an acid obtained from flesh; obtained in preparing creatine.

Inosin, (i-nō'sin) [Gk. *is*, muscle.]= $C_6H_{12}O_6$ $2H_2O$=Inosite=Muscle sugar: a crystalline substance obtained from muscle.

Insalivation, (in-sal-i-vā'shun). [Saliva, *q.v.*] The action of the salivary fluid on food.

Insect, (in'sekt). [*Insectum*, the Latin name.] An animal with a head, mouth, eyes, and usually wings, six legs, and the body in segments, more or less consolidated, with a hard integument; belonging to Arthropoda.

Insecta, (in-sek'ta). [The Latin name.]= Hexapoda, Insects: a division of Annulosa. *v.* Insect.

Insects, classifications of: —
1. According to the wings—
Hymenoptera.
Coleoptera.
Orthoptera.
Neuroptera.
Hemiptera.
Homoptera.
Lepidoptera.
Diptera.
2. Chewing Insects=Mandibulata—
Biting Insects—
Neuroptera.
Orthoptera.
Coleoptera.
Licking Insects—
Hymenoptera.
Sucking Insects=Haustellata—
Pricking Insects—
Hemiptera.
Diptera.
Sipping Insects—
Lepidoptera.
3. According to the degree of metamorphosis—
Heteromorpha—
Hymenoptera.
Coleoptera.
Diptera.
Lepidoptera.
Neuroptera (pars).
Homomorpha—
Orthoptera.
Hemiptera.
Neuroptera (pars).

Insect-beds. Found in Lias striata, containing remains of insects, small fish, &c.

Insect life, stages of. 1. Egg: first stage. 2 Larva: vermiform, with or without legs, locomotive and voracious 3. Pupa=Nymph. quiescent, often enclosed in cocoon or other covering. 4. Imago: perfect insect.

Insectivora, (in-sek-tiv'ō-ra). [L. *insectum*, insect; *voro*, I eat] Insect eating animals= Hedgehogs, shrews, moles, &c.: a division of Mammalia.

Insessores, (in-ses-sō'rez). [L. *insideo*, I sit upon.]=Perching birds=Passeres: a primary division of birds. *v.* Vigors. Birds living in pairs, building nests in trees, having slender legs and flexible toes. *Sub-division of I.:*
Fissorostres.
Dentirostres.
Conirostres.
Scansores.
Tenuirostres.

Instinct, (in'stinkt). [*Instinctus*, the Latin word.] *Definitions of I.* 1. "The performance of complex acts absolutely without previously acquired knowledge." 2. "Disposition operating without the aid of instruction or experience." 3. "A mental power totally independent of organization." 4. "Habits acquired by adaptation, and transmitted through many generations."

Insula Lesbos. A peak in the moon.

Insulators of electricity. Substances that do not conduct electricity: glass, sulphur, shellac, &c.

Intaglio, (in-tal'yo). [The Italian word.] A medal, coin, &c., in which the figures are hollowed out. *cf.* Cameo.

Integer, (in'te-jer). [The Latin word.] A whole number. *cf.* Fraction.

Integral, (in'te-gral). [Integer, *q.v.*] Whole· entire. *I. calculus.* a method of performing the summation of an infinite series of indefinitely small terms.

Integration, (in-te-grā'shun). The process of the integral calculus.

Integument, (in-teg'ū-ment). [*Integumentum*, the Latin word] Used generally for any covering, specially for the skin.

Intensity, (in-ten'si-ti)=Tension. *I. of light*= Brightness: depends on the quantity of light that falls on a given space. *I of a sound*= Loudness: depends on the extent of the vibrations producing it, being more intense as the vibration increases in extent.

Intercalary, (in-ter'kal-a-ri). [*Intercalaris*, the Latin word.] Interposed. *I. day:* the 29th February; a day interposed in the calendar every fourth year *v* Leap year.

Intercostal, (in-ter-kos'tal). [L. *inter*, between; *costa*, rib.] *I. muscles*· the muscles of the ribs: by the action of which the chest is expanded and contracted during inspiration and respiration.

Interference, (in-ter-fē'rens). *I. of light*· the crossing of two rays of light, which produces darkness. *Sound:* the crossing of two rays of sound. *Spectrum:* produced by using a grating instead of a prism. *v.* Spectrum.

Intermaxillary,(in-ter-mak-sil'la-ri). [L. *inter*, between; Maxillary, *q v.*] = Præmaxillary: bones between and in front of the maxillæ in Vertebratæ, in which the upper incisor teeth are inserted

Interosseous artery: in the arm, between the radicle and ulnar arteries

Intervals, (in'ter-valz). In music: the ratio of the vibrations required to produce two given notes is the interval between them.

Intervertebral foramina. Openings between the vertebræ through which the spinal nerves pass off.

Intestinal, (in-tes'ti-nal). [Intestines, *q.v.*] *I. animals:* Oken's term for Invertebrata. *I. canal* = Intestines, *q.v.* *I. juice*=Succus entericus: an alkaline secreted by the intestines.

Intestines, (in-tes'tinz). [L. *intestinus*, internal.] A long tube reaching from the stomach to the rectum, in man much convoluted divided into small intestines and large intestines.

Intestine animals. Oken's term for Polyps.

Intrados, (in-trā'dos) [The French word.] The inner curve of an arch or vault. *cf.* Extrados.

Intumescence, (in-tū-mes'ens). [L. *intumesco*, I swell.] Swelling expansion.

Intussusception, (in-tū-sus-sep'shun). [L. *intus*, within; *suscipio*, I take.] Receiving inwardly: absorption.

Inula, (in'ū-la). [The Latin name.] An herb belonging to Asteraceæ. *I. helenium.* Elecampane. *I. conyza* = Ploughman's spikenard. *I. crithmoides*=Golden samphire.

Inulin, (in'ū-lin) [Inula, *q.v.*] 1. A substance closely resembling starch and sugar, found in cell sap. 2. A volatile oil from Inula helenium.

Inundation mud=Loess, *q.v.*

Inuus, (in'ū-ŭs). [The Latin name.] = Macacus: a monkey, found in India, Africa, and at Gibraltar. The Barbary ape and Indian monkey belong to Macacus.

Inverse, (in-vers'). [*Inversus*, the Latin word.] Reversed. *I. proportion*, *v.* Ratio. *I. ratio*, *v.* Ratio.

Inversion, (in-ver'shun). [Inverse, *q v.*] Reversal. 1. In mathematics: the reversal of an operation. 2. In music: the change made by raising or lowering one of two given notes an octave.

Invertebrata. [L. *in*, not; Vertebrata, *q v.*] Animals having no backbone or spinal column, and, usually, a body of but one tube.

Classifications of I.—

1. Mollusca. Annuloida.
   Annulosa. Cœlenterata.
   Protozoa.
2. By Huxley—
   Mollusca. Annulosa.
   Molluscoida. Annuloida.
   Cœlenterata. Infusoria.
   Protozoa.

Palæozoic I. can now be classed under existing divisions; but when existing were probably not so distinctly separated as their modern representatives. *I. Lithichnozoa*, *v.* Lithichnozoa.

Inverted. *I. sugar:* an uncrystallisable variety of sugar, named from causing left-handed rotation of polarised light. *v.* Polarization.

Involucrum, (in-vō-lū'krum). [The Latin word.] A whorl of bracts, surrounding a group of flowers.

Involute, (in'vō-lūt). [L. *in*, into; *volvo*, I roll.] The curve described by the end of a string which is unwound from the circumference of a curve and kept stretched. *cf.* Evolute. *I. teeth:* teeth having the form of involutes to the surface on which they are placed. *I. of a circle:* when the curve from which the string is unwound is a circle.

Involution, (in-vō-lū'shun). [*Involutio*, the Latin word.] The formation of the powers of any number by its multiplication the required number of times. *cf.* Evolution

Io, (ī'ō). [Classical.] 1. No. 85 of the Minor Planets. 2. One of the satellites of Jupiter.

Iodamides, (ī-od'a-mīdz). [Iodine and Amide, *q.v.*]=Iodammoniums: compounds of iodine and ammonia, mostly explosive.

Iodammonium, (ī-od-a-mō'ni-um) = NH_3I= Iodide of ammonium.

Iodates, (ī'ō-dāts). [Iodic, *q v.*] Compounds of iodic acid and a base.

Iodic acid, (ī-od'ik). [Iodine, *q.v.*]=HIO_3= Hydric iodate: an acid compound of hydrogen, iodine, and oxygen. *Per I.*=HIO_4.

Iodides, (ī'ō-dī-dz). [Iodine, *q.v.*] Compounds of iodine and other elements, all solids. *I. of nitrogen*=An explosive compound.

Iodine, (ī'ō-dīn). [Gk. *iodes*, violet]=I': a volatile, solid, elementary substance, obtained from sea-weeds, sponges, &c.; one of the Halogens, *q.v.*

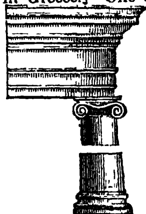
Iodoform, (ī-od'o-form). [Iodine and Formyl, *q.v.*]=CHI_3: a solid compound of carbon, hydrogen, and iodine, analogous to chloroform, *q.v.*

Iodyrite, (ī-od'i-rīt). [Iodine, *q.v.*] A mineral, chiefly iodine and silver, found in soft, translucent plates.

Iolite, (ī'ō-līt). A mineral, chiefly silicate of aluminum, iron, and magnesium. *Hydrous I.*=Fahlunite.

Iones, (ī'ōnz). [Gk. *ion*, going] The substances resulting from decomposition by Electrolysis. *v.* Anione and Kationе.

Ionic, (ī-ŏ'nik). [Ionia, in Greece.] One of the orders of Grecian architecture, *q.v.*


Ionic.

Ipecacuanha, (ip-ē-kak-ū-an'a). [The Brazilian name.] An emetic drug, obtained from the root of Cephælis ip. *I. of Guiana*=Root of Bœrhavia decumbens. *I. of Venezuela* = Root of Sarcostemma glaucum. *Wild I.*=Asclepius curassavica.

Irene, (i-rē'nē). [Classical.] No. 14 of the Minor Planets.

Iridaceæ, (ī-ri-dā'se-ē). [Iris, *q.v.*] = Irids: herbaceous plants, with beautiful distichous flowers, belonging to Narcissales.

Iridescence, (ī-ri-des'sens). [Iris, *q.v.*] Display of variety of colours, from refraction or diffraction.

Iridium, (ī-rid'i-um) [L. *iris*, rainbow, *q.v*] =Ir''': one of the noble metals: a very hard, white, brittle metal, usually found with platinum, named from the varying colours of its oxides. *Native I.*=Iridosmine.

Iridosmine, (ī-ri-dos'mīn). [Iridium and Osmium, *q.v.*] An alloy of osmium and iridium, found in abundance in California.

Iris, (ī'ris). [The Latin word.] 1. A fibrous membrane in the eye, covering the front of the crystalline lens, excepting a circular space in the centre through which the light passes, the amount being varied by the dilation or contraction of the iris. 2. *v.* Rainbow. 3. A plant, the type of Iridaceæ, *q.v.*

Irish. *I. deer*=Cervus megaceros. *I. moss*= Chondrus crispus.

Irite, (ī'rīt). A variety of Chromite, probably a compound of Chromite and other minerals.

Iron, (ī-ern). [*Iren*, the A.-S. word.]=Fe''''= Ferrum: the most abundant metal: a hard, grey, tenacious metal, fusible only at a very high temperature, which is of universal use, and, if very finely divided, burns in contact with the air: the most magnetic of all known substances. *I. alum*=Halotrichite. *I. chrysolite*=Fayalite *I. fiddle*=A number of pieces of iron wire, of different lengths, fixed at one end, by the vibration of which notes are produced. *I. like metals:* magnetic metals, such as iron, cobalt, nickel, &c., which decompose water

when red-hot. *I. group of minerals* includes magnetite, hematite, limonite, gœthite, chalybite, pyrites, marcasite, mispickel, and vivianite: usually hard and heavy, and often magnetic. *I. pyrites* = FeS_2=Bisulphide of iron: a common ore of iron. *I. wood*, name given to many different trees having hard timber, and especially to Inga-xylocarpa: a tree of Guiana, with small leaves, white flowers, and very heavy durable timber *Passive I.*, not acted on by acids. *Telluric I*, native iron containing tellurium.

Iroquois. A N. American race.

Irradiation, (ir-rā-di-ā'shun). [L. *irradio*, I shine forth.] The irregular extension of the image of any object, by means of which it seems increased in size.

Irregular animals: Burmeister's term for Infusoria.

Isabnormals, (ī-sab-nor'malz). [Gk. *isos*, equal; *ab*, from; Normal, *q.v.*] Deviations from mean temperature.

Isamic acid, (ī'sa-mik). [Isatin and Ammonia, *q.v.*]=$C_{16}H_{13}N_3O_4$: a crystalline substance obtained by the action of ammonia on isatin.

Isamide, (ī'sa-mīd). [Isatin and Ammonia, *q.v.*]=Amasatin, *q.v.*

Isatane, (ī'sa-tān). [Isatin, *q v.*]=$C_{32}H_{26}N_4O_6$ =Hydrated indigotin.

Isathyd, (ī'sa-tid). [*Isatin hydrogenised*]= Indyl hydrate=$C_{16}H_{12}N_2O_4$: a grey crystalline substance obtained from isatin.

Isatic acid, (ī-sā'tik). [Isatis, *q.v.*]=$H_2I_nO_2$ =$C_8H_7NO_3$=Hydrated isatin.

Isatin, (ī'sā-tin). [Isatis, *q.v.*] = $C_8H_5NO_2$: oxidised blue indigo: a blue dye; also obtained from isatis.

Isatis, (ī-sā'tis). [The Greek name.]=Woad: a tall herb with yellow flower, belonging to Brassicaceæ, from which the blue dye isatin is obtained.

Ischium, (is'ki-um). [*Ischion*, the Greek word.] The lower portion of the thigh bone socket: forming the lowest part of the os innominatum bone.

Ischyodus, (is-kī'o-dus), [Gk. *ischys*, strength; *odous*, tooth.] A fish, several fossil species of which are known.

Ischypterus, (is-kip'ter-us). [Gk. *ischys*, strength; *pteron*, fin.] Fossil remains of fish found in New Red Sandstone of America, the fins of which were large and strong.

Isethionic acid, (ī-se-thī'on-ik). [Gk. *isos*, equal; Ethionic, *q.v.*]=$C_2H_6SO_4$=Hydrated ethionic acid.

Isinglass, (ī'zin-glas). [*Hausenblase*, the German name.]= Fish-glue: a white translucent gelatinous substance made from Indian fishes, and the swim-bladder of sturgeon. *v.* Gelatin.

Island of Reil. A triangular prominence in brain.

Isis, (ī'sis). [Classical.] No. 42 of the Minor Planets.

Iso, (ī-sō). [Gk. *isos*, equal.] A prefix, implying equality.

Isochimenal lines, (ī-so-kī'me-nal). [Gk. *isos*, equal; *cheimon*, winter.] Lines of equal winter temperature.

Isochromatic, (ī-sō-krō-mat'ik). [Gk. *isos*, equal. Chromatic, *q.v*] Of the same colour.

Isochronic, (ī-sōk'ron-ik). [Gk. *isos*, equal; *chronos*, time] Occurring at regular intervals of time.

Isochronous, (ī-sok'ro-nus). [Gk. *isos*, equal: *chronos*, time.] = Isochronic, *q v.* *I. pendulums*, vibrating regularly together.

Isochinal, (ī-sō-klī'nal). [Gk. *isos*, equal; *klinein*, to bend] Having the same inclination or dip. *v.* Dip.

Isocryme, (ī'sō-krīm). [Gk. *isos*, equal; *krymos*, cold] Cold water line = 68° F. mean temperature: the cold limit of coral making polyps.

Isocyanuric acid, (ī-sō-sī-a-nū'rik). [Iso and Cyanuric, *q.v.*]=Fulminuric acid, *q v.*

Isoetis, (ī-so-ē'tis). [Gk. *isos*, equal; *etos*, year.] An aquatic stemless plant, belonging to Lycopodiaceæ.

Isogonic lines, (ī-sō-gon'ik). [Gk. *isos*, equal; *gonia*, angle.] Lines passing through all the places at which the magnetic declination is the same.

Isomerism, (ī-som'er-izm). [Gk. *isos*, equal; *meros*, part.] Compounds identical in composition, but different in properties.

Isomorphism, (ī-sō-morf'izm). [Gk. *isos*, equal, *morphe*, form.] The crystallization of different substances in the same form: generally, resemblance in form.

Isonandra, (ī-sō-nan'dra). [Gk. *isos*, equal, *aner*, man] A plant belonging to Sapotaceæ: named from the character of the stamens. *I gutta:* Gutta-percha tree.

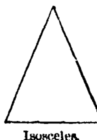
Isopoda, (ī-sop'o-da). [Gk. *isos*, equal; *pous*, foot.]=Wood-lice: crustacean animals, forming a sub-division of Edriophthalmata.

Isoprene, (ī'sō-prēn)=C_5H_8: a volatile hydrocarbon, obtained from India-rubber.

Isopropyl. *v.* Propyl.

Isopyre, (ī'sō-pīr) [Gk. *isos*, equal; *pyr*, fire] A mineral: chiefly silicate of iron, calcium, and aluminum.

Isosceles, (ī-sos'se-lēz). [Gk. *isos*, equal; *skelos*, leg.] *I. triangle:* one having two sides equal.


Isosceles.

Isoseismal, (ī-sō-sīs'mal). [Gk. *isos*, equal; *seismos*, earthquake.] Lines of equal disturbance. *v.* Seismology.

Isotartaric. *v.* Tartaric.

Isotheral lines, (ī-soth'e-ral). [Gk. *isos*, equal; *theros*, summer] Lines of equal summer temperature.

Isothermal lines, (ī-so-ther'mal). [Gk. *isos*, equal; *thermos*, heat.] Lines of equal annual average temperature.

Isotropic, (ī-so-trop'ik). [Gk. *isos*, equal; *trope*, turning.]=Amorphous, *q.v.*

Isthmus, (ist'mus). [The Latin word.] *I. of Fauces:* space between arches of the palate.

Itaconic acid, (ī-ta-kon'ik). [Aconitic, *q.v.*] A crystalline acid substance, obtained from aconitic acid=$C_5H_6O_4$.

Italian May=Spiræa hypericifolia.

Itch-mite: a microscopical animal, belonging to Acaridæ.

Ite, (īt). 1. A termination in Mineralogy, implying a quality, probably an abbreviation of Lithos, *q.v.* 2. A termination in chemistry. *v.* Nomenclature in Tables.

Ivory, (ī'vō-ri). [L. *ebur*, ivory.] 1. Generally =Dentine: one of the constituents of teeth, *q.v.* 2. Specially the tusks of the elephant, narwhal, &c. *Vegetable I.*=I. nut: seeds of Phytelephas, *q.v.* *I. black*=Animal charcoal.

Ivy, (ī'vi). [*Ifig*, the A.-S. name.]=Hedera: A climbing evergreen epiphytic plant belonging to Araliaceæ. *Grass I.*=Campanularia integra. *Ground I.*=Nepeta.

Ivy-worts=Araliaceæ, *q.v.*

Ixiolite, (iks'i-ō-līt). A variety of tantalite.

Ixolite, (iks'ō-lit). [Gk. *ixos*, bird-lime, *lithos*, stone.] A hydrocarbon, belonging to the Fichtellite group of minerals, named from being gluey when warmed.

Izar=ε Bootis: a star in the constellation Bootes.

J.

Jacamar, (jak'a-mär). [The French name.] =Galbula. a bird belonging to Halcyonidæ.

Jacchus, (jakus). [Iacchus.]=Ouistitis: an American monkey; also called squirrel-monkey., *v.* Hapale.


Jacchus

Jacinth, (jā'sinth). [The French word.] A variety of the hyacinth.

Jack, (jak). 1.=Esox lucius: a fish. 2. Screw-jack, *q.v.* *J. ass*, *v.* Jackass. *J. daw*=Corvus monedula. *J. fruit*=Of Artocarpus integrifolia: resembles bread-fruit. *J. by the hedge* =Sisymbrium alliaria. *J. snipe*=Scolopax gallinula. *Black J.*= Sulphide of zinc. *v.* Blende.

Jackass. The male of the ass. *Laughing J.* = Feathered J.= Dacelo gigantea: a New Zealand bird.

Jacob's ladder. 1. = Polemonium cœruleum. 2.=An endless chain of lifts for raising materials. *J. stones:* a local name for some of the Caradoc sandstones, which have so many fossils as to be practically limestone.

Jacobi, (ya-kō'bi). *Unit of J.*, *v.* Resistance.

Jacquard apparatus, (jak'ard). [M. Jacquard, the inventor.] An endless chain, consisting of a series of variously perforated cards, by the action of which the movements of a loom are controlled, so as to produce a pattern in the woven fabric.

Jade, (jād). [The French name.]=Nephrite, *q.v.*

Jaguar, (jag'ū-är). [*Jagoara*, the Brazilian name.]=Felis onca: a panther-like animal; also called the American tiger.


Jaguar.

Jaina = Ati = Calophyllum inophyllum: a tree of the S. Sea Islands.

Jalap, (jal'ap). [*Xalapa*, the Mexican name.] A purgative obtained from the root of Convolvulus Schiedanus.

Jalapic acid, (ja-lap'ik). [Jalap, *q.v.*] $C_{34}H_{60}O_{18}$=Scammonic acid, *q v.*

Jalpaite, (jal'pā-īt). A variety of silver glance.

Jamesonite, (jām'so-nīt). [Prof. Jameson.] A mineral of the antimony group, chiefly sulphide of lead and antimony, easily fusible, crystallising in rhombs. Feather-ore is a fibrous variety of Jamesonite.

Janipha, (yan-ī'fa). [*Janipaba*, the Brazilian name.] = Manihot: a plant belonging to Euphorbiaceæ.

Janssen slide, (yans'sen). [Prof. Janssen.] For taking a series of photographs of a moving object in rapid succession.

Japim=Cassicus icteronotus: a magpie-like bird of Brazil.

Japonic acid, (ja-pon'ik). $C_{12}H_{10}O_5$: obtained from catechin, one of the tannic acids, *q.v.*

Jar, (jär). [Ar. *jarrah*, ewer.] *Leyden J.:* a glass jar, partially covered with tin-foil, used for the collection of electricity. *Luminous J.:* a Leyden jar of which the metal coating is in detached portions, so that the sparks of electricity pass from one to another.

Jararaca=Craspedocephalus atrox: a poisonous snake of Brazil.

Jargionite. A variety of galena.

Jargon, (jär'gon).=Zircon, *q.v.*

Jasione, (jā-sī'ō-ne)=Sheep's-bit: a plant belonging to Campanulaceæ.

Jasminaceæ, (jas-mi-nā'se-ē). [Jasminum, *q v.*]=Jasmin-worts: shrubs belonging to Echiales.

Jasminum, (jas'mi-num). [Gk. *ia*, violet; *osme*, smell.] Jasmine: a twining shrub, the type of Jasminaceæ.

Jasper, (jas'per). [*Iaspis*, the Greek name.] An opaque variety of native silica, coloured by iron, &c. *J. bloodstone*=Heliotrope, *q.v.*

Javelin snake=Cape Pintado=Anguis melagris.

Jatropha, (jat'rō-fa). [Gk. *iama*, cure, *trophe*, food.] A plant belonging to Euphorbiaceæ; also called Physic-nut. *J. manihot*=Tapioca plant.

Java-cock=Gallus ferrugineus.

Jaws, (jawz).=Mandibles: organs of mastication; in vertebrate animals, always in the head; in invertebrate animals, often in specially modified limbs. *Foot J.*=Maxillipedes, *q.v.*

Jay, (jā). [*Geai*, the French name.]=Garrulus: a bird belonging to Corvidæ.

Jeffersonite, (jef'fer-son-īt). [Mr. Jefferson.] A variety of augite.

Jejunum, (jē-jū'num). [L. *jejunus*, empty.] A portion of the small intestines.

Jelly, (jel'li). [*Gelée*, the French word.] A semi-transparent gelatinous variety of food. *Animal J.*, *v.* Gelatine and Isinglass. *Vegetable J.*: obtained from fruits, such as the currant, and from various mosses and lichens. *J. fishes*=Hydrozoa, *q.v.* *J. lichens* =Coll[illegible]eæ.

Jerb[illegible] [illegible]er-bō'a) [*Yerboa*, the Arab. name.]= D[illegible]=Mus sagitta: a small animal belonging to Rodentia, remarkable for the length of its hind legs, also called Jumping-mouse.


Jerboa.

Jer-falcon, (jer-faw'-kon). [Hierofalco, *q v*]=Gyr-falcon=Falco islandicus. *v.* Ger-falcon.

Jericho, Rose of=Anastatica hierochuntina: a plant, belonging to Brassicaceæ, found in Syria and Egypt.

Jersey tea=Ceonothus Americanus: a plant belonging to Rhamnaceæ.

Jerusalem artichoke. [It. *girasole*, sunflower.] =Helianthus tuberosus: a plant belonging to Asteraceæ

Jervic acid=$C_{14}H_{10}O_{12}+2H_2O$: a white crystalline substance obtained from the root of Hellebore.

Jessamine=Jasminum, *q.v.* *Cape J.*=Gardenia, *q v.*

Jet, (jet). [*Jayet*, the French word.] A lustrous brittle mineral, probably a variety of coal, a variety of lignite.

Jewels, (jō'elz). [*Joyau*, the French word.]= Precious stones=Gems, *q.v.*

Jewellery=Jewelry: gems set in gold or silver for ornaments.

Jicara, (yik'a-ra). A tree as large as an apple tree, with orange-like fruits growing on the trunk.

Job's tears=Coix lachryma: a plant, belonging to Graminaceæ, named from the shape of its fruits.

Johanna, (jō-han'na). No. 127 of the Minor Planets.

Johannite, (jō-han'nīt). [Prof. John.] A mineral, chiefly sulphate of uranium.

Joinery, (join'ẹr-i). 1. A general term for the wood-work to buildings, such as doors, window-frames, &c. 2. The art of making such structures of wood.

Joint-firs=Gnetaceæ, *q.v.*

Joints, (joints). 1. Natural fissures in rocks. 2. Connections between the various bones or cartilages of the body. *Perfect J.*: when two smooth surfaces move on each other. *Imperfect J.*: when the connection is by ligaments. *Hinge J.*: in which motion is in one plane only, as the elbow. ***Pivot J.***: in which one bone turns upon the other as a centre, as in the neck. *Ball and socket J.*: in which one bone moves within the other, as the shoulder. *Shackle J.*: in which two rings of bone are connected, as in the spine bones of some fishes.

Jolly boat. [Yawl, *q.v.*] A clincher-built boat. *v.* Yawl.

Jollyte, (jol'līt). A mineral, chiefly silicate of magnesium, iron, and aluminum.

Joloffs. An African people.

Jugal, (joo'gal). [L. *jugum*, yoke.] A bone of the face of lower animals, corresponding to the human cheek bone.

Juglandaceæ, (jug-lan-dā'se-ē). [Juglans, *q.v.*] =Juglands: trees, sometimes resinous, belonging to Quernales.

Juglandin, (jōōg'lan-din). [Juglans, *q v.*] An alkaloid obtained from walnut juice.

Juglans, (jōō'glanz). [*Jovis*, Jove's; *glans*, acorn.] A plant belonging to Juglandaceæ. *J. regia*=Walnut tree. *J. alba*= Hickory.

Jugular, (jōō'gū-lar). [L. *jugulum*, collar bone.] Belonging to the neck. *J. vein*: the vein bringing the blood back from the head and neck to the heart. *J. fishes*: those having the posterior limbs are much more forward than normally. Ex. cod.

Juice, (jūs). [F. *jus*, broth.] A general term for the fluid portion of any animal or vegetable substance. *Gastric J*: in the stomach, *v.* Gastric. *Intestinal J.*=Succus entericus. *v.* Intestinal.

Julia. No 89 of the Minor Planets.

Julian, (joo'li-an). [Julius Cæsar.] *J. calendar*: as arranged by Julius Cæsar, in which the year began with March, and when the intercalary day in leap year was first introduced. *J. epoch*=46 B C. the date of the Julian Calendar. *J. period* = 7980 years, being 19×28×15=7980=the common measure of the Lunar Cycle, Solar Cycle, and Indiction. *J. year*=365 days 6 hours.

Julianite, (jōō'li-a-nīt) [Juliane mine.] A mineral, chiefly a mixture of copper, sulphur, arsenic, &c.

Julidæ, (joo'li-dē)=Millipedes: a sub-division of Myriapoda, *q.v.*

Jumper. A mining tool: a steel-pointed chisel.

Jumping. *J. bugs*=Halticocoridæ, *q.v.* *J. hare*=Pedetes capensis=Helamys capensis. *J. johnny*=J. fish=Close-eyed gudgeon. *J. mouse*=Meriones Hudsonicus. *J. spider*= Attus.

Juncaceæ, (jun-kā'se-ē). [Juncus, *q v.*]= Rushes: herbs with thin stem and brown or green flowers, belonging to Juncales.

Juncaginaceæ, (jun-kā-jin-ā'se-ē). [Juncus, *q.v.*]=Arrow-grasses: rush-like plants belonging to Alismales.

Juncales, (jun-kā'lēz). [Juncus, *q.v.*] Plants belonging to hypogynous endogens, of which juncaceæ are the type. *v.* Lindley.

Juncus, (jun'kus). [*Jungo*, to join.]=Rush: an herb the type of Juncaceæ.

Jungermanniaceæ, (jun-ger-man-ni-ā'se-ē). [Louis Jungermann.]=Scale mosses: small moss-like creeping plants belonging to Muscales.

Jungle sheep=Kemas hylocrinus: an Indian goat-like animal.

Juniper, (jōō'ni-pẹr). Juniperus: a plant belonging to Pinaceæ.

Juno, (jū'nō). [Classical.] No. 3 of the Minor Planets.

Jupiter, (jū'pi-ter). [Classical.] The largest of the planets, having four moons, diameter, 85,000 miles; distance from sun, 478 millions of miles; year equal twelve of ours; has two belts or streaks of darkness across its face *J.'s satellites:* Io, Europa, Ganymede, Callisto. *J.'s flower*=Dianthus.

Jurassic, (joo-ras'sik). [Jura Mountains]= =Oolite and Lias formations: a sub-division of the secondary strata, composed of successive beds of clay, sandstone, and limestone.

Jurinite =Brookite.

Jussieu's classification of plants, chiefly according to germination and petals:—
Acotyledones.
Monocotyledones.
Dicotyledones.
Apetalæ.
Monopetalæ.
Polypetalæ.
Diclines.

Jute, (joot). The fibre of a plant belonging to Corchorus, used for coarse cloths, cordage, &c.

K.

Kadsura (kad-sū'ra). A plant, found in Japan, which is the type of Schizandraceæ.

Kadsurads. [Kadsura, *q.v.*]=Schizandraceæ, *q.v.*

Kafirs, (kaf'ferz). S. African people *K. bread:* made from pith of Encephalartos caffer.

Kainozoic, (kā-nō-zō'ik) [Gk *kainos*, recent; *zoon*, animal.]=Cainozoic=Tertiary, *q.v.*

Kakodyl, (kak'ō-dil). [Gk. *kakos*, bad, *odme*, smell.] = $As(CH_3)_2$ = Kd=Arsenodimethyl =Cacodyl: a heavy poisonous fuming liquid, which takes fire in contact with air, and combines with oxygen, chlorine, &c , in the same manner as a simple metal. *K oxide*= Kd_2O=Alkarsin=Cadet's fuming liquid: a colourless, fœtid, poisonous fluid, which inflames in contact with oxygen.

Kale, (kāl). [*Kaul*, the A.-S. name.]=Crambe, *q v*

Kaleidoscope, (ka-lī'do-skōp). [Gk *kalos*, beautiful, *eidos*, form; *skopeo*, I show] An optical instrument, by which a pattern, formed by the accidental grouping of a number of small pieces of coloured glass, is reflected so as to appear six-fold The grouping can be varied at will, so that an endless succession of patterns can be obtained.

Kalendar, (kal'en-dar). [L. *calendæ*, first days of the months.] The arrangement of the days and months of the year. *v.* Year *Gregorian K.*: arranged by Pope Gregory XIII., 1582, when ten days were omitted as a correction of the Julian K. Adopted in Britain in 1752 *v.* Old style. *Julian K.*: arranged by Julius Cæsar, B C. 46, the base of the present calendar.

Kali, (kā'li). [*Qali*, the Arabic name] The ashes of the glass-plant or Salicornia. *v.* Alkali.

Kalinite, (kal'i-nīt). [Kali, *q v.*]=Alum : a mineral, composed of sulphate of potash and alumina.

Kalium, (kā'li-um). [Kali.]=Potassium, *q v.*

Kalmia, (kal'mi-a). [P. Kalm of Sweden.]= American Laurel=Calico-bush: a plant belonging to Ericaceæ.

Kames, (kāmz). [Scotch.] Mounds and ridges of land, crossing and recrossing each other.

Kampelite, (kam'pe-līt). A variety of mimetite, *q v.*, containing phosphate of lead.

Kanakas. An Oceanic race.

Kangaroo, (kang'ga-ro)=Macropus: an herbivorous animal, belonging to Marsupialia, found in Australia. *K. bear*= Phascolarctos cinereus. *K. grass*= Anthisteria Australis. *K. rat*= Macropus minor. *Tree K.*=Dendrolagus. *White K* = Albino, very rare.


Kangaroo

Kangaroos, (kang ga-rōz) = Macropodidæ: a sub-division of Marsupialia, *q v.*

Kaolin, (kā'o-lin). [*Kaoling*, the Chinese name]=Kaolinite=Porcelain clay=China : chiefly hydrated silicate of alumina, a mineral substance, belonging to the serpentine group, used in making the best kind of pottery.

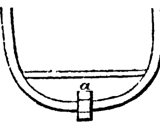
Kathetometer, (kath-e-tom'e-ter). [Gk *kathetos*, vertical height, Meter, *q.v.*] An instrument for measurement of small differences of height, as in the barometric column, &c.

Kathode, (kath'ōd). [Gk. *kata*, down; *hodos*, road.] The negative pole, or electrode, of a galvanic battery.

Kationе, (kat-i-ō'ne). [Gk. *kata*, down; *ion*, going.] The electro-positive elements of a chemical compound, which, during electrolysis, go to the kathode or negative pole of the battery. *cf.* Anione.

Kayu puteh oil=Cajeput, *q v.*

Keel, (kēl). [*Ceol*, the A.-S. word] The central lowest portion of a ship, extending from stem to stern. *False K.*: a covering to the main keel, intended as a protection.



a, Keelson.

Keelson, (kēl'son). [Keel, *q.v*] A timber

corresponding to the keel, within the ship: serving to keep the ends of the floor-timbers down to the keel.

Keeper=Armature: a piece of soft iron used to connect the two poles of a magnet, when not in use; and so to prevent the dissipation of its magnetic force.

Kelloway rock, (kel′ō-wā) [K. in Wiltshire.] A bed of arenaceous limestone, belonging to Middle Oolite. *v.* Oolite.

Kelp, (kelp). [*Kilpe*, the old English word.] Ashes from sea-weeds, &c., which are burnt to obtain the contained iodine.

Kent's cavern, near Torquay, in Devonshire, in which many fossil remains of mammalia have been found.

Kepler's Laws. 1. The orbit of each planet is an ellipse, having the sun at one of its foci. 2. The radius vector of a planet describes equal areas in equal times. 3. The square of the time of revolution and the cube of the mean distance have the same ratio for every planet.

Kerargyrite, (ker-ār′ji-rit). [Gk. *keras*, horn; *argyron*, silver.]=Horn-silver: a variety of Kerate, *q.v.*

Kerate, (ker′āt). [Gk. *keras*, horn.] A mineral, chiefly chloride of silver: one of the silver group of minerals.

Keratin, (ker′a-tin). [Gk. *keras*, horn.]=Horn: substance of horns, nails, feathers, hair, &c.

Keratode, (ker′a-tōd). [Gk. *keras*, horn, *eidos*, form.] A horn-like substance, forming the skeleton of horny sponges.

Keratophora, (ker-a-tof′ō-ra). [Gk. *keras*, horn, *phoreo*, I bear.] Aristotle's term for Ruminant animals.

Keratophyta, (ker-a-tof′i-ta). [Gk. *keras*, horn; *phyton*, stem.]=Horny polyps: a sub-division of Anthozoa.

Keratosa, (ker-a-tō′sa). [Gk. *keras*, horn.] Horny sponges: a sub-division of sponges, in which there is a skeleton of horny fibres.

Kermes-grains, (ker′mēz). [The Arabic name.] The dried bodies of Coccus ilicis, from which a red dye is obtained.

Kermesite, (ker′me-sit). [Kermes, *q.v.*]=Red-antimony: an ore of antimony, chiefly the sulphide, named from its red colour.

Kerosene, (ker′ō-sēn). [Gk. *keros*, wax.] A liquid hydrocarbon: an American earth-oil, used for lighting.

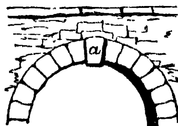
Kestrel, (kes′trel). [*Cresserelle*, the French name.]=Tinnunculus alaudarius=Falco tin: a bird belonging to Falconidæ.

Ketones, (kē′tōnz). [Acetone, *q.v.*]=Acetones.

Kette=Deka-metre, *q.v.*

Keuper, (kū′per) [G. *kupfer*, copper.]=Upper Trias: beds of great thickness in England; also called New Red Sandstone.

Key, (kē). [*Cæg*, the A.-S. word.] 1. A wedge. 2. A small lever. 3.=Scale, *q.v.* *K. note:* the chief note of musical composition. *K. stone:* the chief, central stone of an arch.



Key-stone

Keys, (kēz). [Key, *q.v.*]=Scales, *q.v.*: natural successions of musical sounds. *K. of A*=Æolian K. *K. of B*=Hypophrygian K. *K. of C*=Ionian K. *K. of D*=Dorian K. *K. of E*=Phrygian K. *K. of F*=Lydian K. *K. of G*=Mixolydian K.

Khamsin, (kam′sin). [Arab. *khamsin*, fifty.]=Simoom: a hot, dry wind of Africa and West Asia, named from usually lasting about 50 days.

Khonds, (kondz). An Asiatic people: living in Orissa.

Kidney, (kid′ni). Two glands, consisting of many tubes, which remove water and urea from the blood, forming a portion of the excretory system. *K. iron-ore:* a botryoidal form of red hæmatite. *K. vetch*=Anthyllis. *K. bean*=Phaseolus vulgaris.

Killas, (kil′las) [The Cornish word.] 1.=Clay slate: a schistose rock. 2. The Cornish name for all sedimentary, cleavable rocks.

Kilo, (kil′ō). [Gk. *chilioi*, one thousand.] A prefix implying one thousand.

Kilogram, (kil′ō-gram) [Kilo and Gramme, *q.v.*]=Kilogramme=2·2 lbs.=1000 grammes=weight of one litre of water at its greatest density; a unit of weight in the Metric system.

Kilolitre, (kil-ō-lē′tr). [Kilo and Litre, *q.v.*]=1000 litres=264 gallons.

Kilometre, (kil-ō-mē′tr). [Kilo and Metre, *q.v.*]=1000 metres=39370·79 inches: about ⅝ of a mile.

Kimmeridge clay. A bituminous bed of shale in Upper Oolite, containing many marine fossils but few plants.

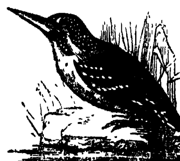
Kinates=Quinates, *q.v.*

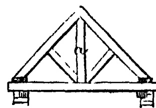
Kinematics, (kin-ē-mat′iks) [Gk. *kinema*, motion.] The geometrical science of motion in the abstract, considered purely as motion, without reference to its cause.

Kinetic, (kin-et′ik). [*Kinetikos*, the Greek word.] Relating to motion. *K. energy*=Energy of motion=Vis viva. *K. stability:* continuance in a given path. *K. unit*=Absolute unit; *v.* Unit.

Kinetics, (kin-et′iks). [Kinetic, *q.v.*]=Kinematics. *Hydro-k.:* the science of motion in a fluid medium.

King. *K. Charles's oak*=Robur Caroli, *q.v.* *K. crab*=Limulus. *K. crow*=Dicrourus: a pugnacious, glossy black bird. *K. fish*=Lampris guttatus. *K. fisher*=Alcedo, *q.v.*: a perching bird. *K. post*=The upright centre beam of a compound girder. *K. vulture*=Vultur papa.


Kingfisher.



a, King-post.

Kinic=Quinic, *q.v.*
Kinit, (kin'it). [Gk. *kinesis*, motion] Proposed by Everett as the unit of force, relatively to the foot, pound, and second.
Kinkajou, (kin'ka-jū) = Potto = Cercoleptes caudivolvulus: a bear-like animal.
Kinone=Quinone, *q.v.*
Kinonic=Quinonic, *q v.*
Kino tree, (kī'nō). 1.=Pterocarpus marsupium tree. 2. A gum-resin obtained from it.
Kirchoff, (kir'khof). [Prof. K.] *K.'s lines*: the absorption lines in the spectrum, *q.v.*
Kitchen-middens. *v.* Danish K.
Kite, (kīt). [*Cyta*, the A.-S. name.] 1.=Rhombus: a fish. 2.=Milvus: a bird. *Brazilian K.*: Falco Brasiliensis.
Kiwi or Kivi, (kī'vī). [The New Zealand name]=Apteryx, *q.v.*
Klinometer, (klin-om'ē-ter). [Gk. *klinein*, to bend; Meter, *q.v.*] An instrument for measuring the inclination of strata, &c.
Kloof wind. A N.W. wind at Cape of Good Hope.
Klumene, (klō'mēn)=Acetylene, *q.v.*
Knapweed, (nap'wēd)=Centaurea: an herb belonging to Asteraceæ.
Knautia, (naw'she-a). A sub-division of Scabiosa.
Knawel, (naw'el)=Scleranthus: an herb belonging to Paronychiaceæ.
Knee, (nē). [*Kneo*, the A.-S. word.]=Genou: a general term for any bend, either in an organic body or an artificial structure
Knight head. The timber next to the stem of a ship.
Knight's wheel. For botanical experiments to show the method of the growth of plants: plants are held in different positions on the circumference of a wheel, so that their manner of growth may be noted.
Knot, (not). [*Cnot*, the A.-S. word.] 1.=6082 ft.=A nautical mile=1 geographical mile+802 ft.=$\frac{1}{60}$ of a degree of latitude. 2. A division of the log line, *q.v.* 3.=Tringa canutus: a bird belonging to Scolopacidæ. *K. grass*=Polygonum aviculare. *K. worts*=Illecebraceæ.
Knuckle line. In the plan of a ship; showing the angle of the stern.
Koala=Phascolarctos fuscus=Kangaroo bear: has teeth like kangaroo, viscera like wombat.
Kocab=β Ursæ Minoris: a star in the constellation Ursa Minor.
Kolliker's classification of animals according to nature of embryo and mode of growth (1844).

Vertebrata.
Articulata.
Gasteropoda and Acephala.
Limax.
Cephalopoda.
Radiata.
Acalephs.
Polypi.
Worms.

Koodoo, (kōō'dōō) = Strepsiceros Kudu: an antelope of S. Africa
Koulan, (kō'lan)=Asinus Onager: the wild ass of Persia.
Koumiss, (kō'mis). [*Kumys*, the Russian word] A spirit prepared from fermented milk.
Kreasote, (krē'a-sōt). [Gk. *kreas*, flesh; *soter*, preserver.] = $C_{12}H_{16}O_2$: a highly-refractive oily liquid, which burns when heated, and which preserves animal substances from decay=Creosote.
Kreatine, (krē'a-tīn). [Gk. *kreas*, flesh.] A crystalline substance found in flesh, blood, &c.
Kresylic acid, (kre-sil'ik)=C_7H_8O=Kresol=Methyl-phenol.
Kryolite, (krī'o-līt). [Gk. *kryos*, frost; *lithos*, stone.] Nearly pure soda, found only in Greenland=Cryolite.
Kupfer-nickel. [The German name]=Niccolite, *q.v.*: a mineral of the nickel group.
Kyanite=Cyanite, *q.v.*
Kyanol, (kī'a-nol). [Gk. *kyanos*, blue.]=Aniline, *q.v.*=Phenylamine.

L.

L=Logarithm, *q.v.*
Labrador series, (lab'ra-dor). [Labrador.]=Upper Laurentian rocks, *q v.*
Labradorite, (lab'ra-dor-īt). [*Labrador*, where found.]=Lime-soda felspar: a mineral of the felspar group of minerals found in hypersthene rock, chiefly oxide of silver, aluminum, and calcium. *L. hornblende*=Hypersthene.
Labia, (lā'bi-a). [L. *labium*, lip.] An insect belonging to Forficulidæ. *L. minor*=Little Earwig.
Labiatæ, (lab-i-ā'tē). [L. *labium*, lip.]=Lamiaceæ, *q.v.*
Labidura, (lab-i-dū'ra). [Gk. *labis*, pincers; *oura*, tail.]=Labidoura: an insect, belonging to Forficulidæ, resembling the earwig, but larger. *L. gigantea*=Great earwig.
Labium, (lā'bi-um). [L. *labium*, lip.] The lower lip in Articulata, formed by the union of the hinder pair of maxillæ.
Labrax, (lab'raks). [L. *labrum*, lip.] A fish belonging to Labridæ. *L. lupus*=Basse.
Labridæ, (lab'ri-dē). [Labrax, *q.v.*; Gk. *eidos*, form.] = Wrasses, &c.: fishes belonging to Acanthopteri.
Labrum, (lā'brum). [L. *labrum*, lip.] The upper lip in Articulata; also used for the outer lip generally.
Labrus, (lā'brus). [The Latin name.] A fish the type of Labridæ. *L. maculatus*=*L. bergylta*=Ballan wrasse.
Laburnum, (la-ber'num). [The Latin name.]=Cytisus laburnum: a tree belonging to Leguminaceæ. *Alpine L.*=Cytisus alpinus.
Labyrinth, (lab'i-rinth). [*Labyrinthos*, the Greek word.]=Maze: a complex passage. *L.*

of ear: communicates with the brain by the auditory nerves.

Labyrinthic teeth, (lab-i-rin'thik). [Labyrinth, *q.v.*] Having many radiating vertical grooves.

Labyrinthodon, (lab-i-rin'thō-don). [Gk. *labyrinthos,* labyrinth; *odous,* tooth.] A large animal, belonging to Amphibia, remains of which are found in Upper Trias: previously named Mastodonsaurus and Phytosaurus. The type of Labyrinthodonta.

Labyrinthodonta, (lab-i-rin-thō-don'ta). [Labyrinthodon, *q.v.*] Extinct amphibious animals, with weak limbs, long tails, and labyrinthic teeth, *q.v.*, known by footprints in Coal Measures.

Labyrinthulæ, (lab-i-rin'thū-lē). [Labyrinth, *q.v.*]=Tram-weavers: a sub-division of Protista, *q.v.*

Lac, (lak) [*Lak,* the Persian word.] 1. A resin obtained from fig and other trees, caused by the insect Coccus laccæ piercing the branches to deposit its eggs: occurs in forms of shell-lac, seed-lac, and stick-lac, the chief constituent of sealing-wax and of lacquer. 2. A hundred-thousand, used chiefly of rupees. *L. dye:* obtained from a species of the Coccus insect, used as a red dye.

Lace. (las). [L *laqueus,* noose] A woven fabric of thread, silk, gold or silver wire, &c. *L. flies*=Insects belonging to Neuroptera *L. bark*=Inner bark of Lagetta lintearia *L. winged flies*=Hemerobius, belonging to Neuroptera. *L. lizard*=Hydrosaurus: a Bornean lizard about 6 feet long. *Indian L. tree*=Lagetta lintearia.

Lacerta, (lā-ser'ta). [The Latin name.] 1. Lizard: a reptile belonging to Lacertilia. 2. The Lizard: a small northern constellation of small stars, formed in the seventeenth century. *L. agilis*=Sand lizard. *L. crocodilus*=Crocodile, *q v.* *L. gecko*=Gecko, *q.v.* *L. Africana*=Chameleon, *q.v.* *L. gigantea* =Geosaurus. *q.v.*

Lacertilia, (lā-ser-til'i-a). [Lacerta, *q v*]= Lizards, chameleon, &c.: a sub-division of Reptilia, of which the males are usually larger than the females.

Lachesis, (lak'e-sis). [Classical.] No. 120 of the Minor Planets, discovered in 1872.

Lachrymal, (lak'ri-mal). [L. *lacrima,* tear.] *L. bones*=Ungual bones, *q.v.* *L. gland:* in the eye, secreting a watery fluid between the eyeball and the eyelid, which fluid is carried away by the lachrymal duct: not found in fishes and cetaceans. *L. nerve:* a sub-division of the ophthalmic branch of the fifth nerve. *v.* Nerves. *L. sinus*=Suborbital sinus: a large cutaneous follicle beneath the eye, open externally, but closed within. Especially developed in antelopes.

Lacistemaceæ, (la-sis-te-mā'se-ē)=Lacistemads: trees and shrubs, with apetalous axillary flowers, belonging to Violales.

Lacquer, (lak'er). [F. *laque,* lac.] A solution of shell-lac in alcohol.

Lacquering, (lak'er-ing). [Lacquer, *q.v.*] Covering with a compound of lac, turpentine, and alcohol.

Lactamic acid, (lak'ta-mik). [Lactamide, *q.v.*] $C_6H_{14}NO_2$: a compound of lactic anhydride and ammonia. Alanin, *q.v.*

Lactamide, (lak'ta-mīd). [Lactic and Amide, *q.v.*] = $C_3H_7NO_2$: a compound of lactic anhydride and ammonia.

Lactation, (lac-tā'shun). [L. *lac,* milk.] The act or period of giving milk in Mammalian animals.

Lactates, (lak'tāts). [Lactic, *q.v.*] Compounds of lactic acid with bases.

Lacteals, (lak'te-alz). [L. *lac,* milk.]=Lymphatic capillaries of the small intestines, which convey the milky chyle to the thoracic duct, found only in vertebrate animals. *v.* Lymphatic system.

Lacteal animals, (lak'te-al). [L. *lac,* milk.] Oken's term for Acalephæ.

Lactic, (lak'tic). [L. *lac,* milk.] *L. acid*= $C_3H_6O_3$: found in sour milk; a syrupy acid liquid, belonging to the glycolic series of acids. *L. anhydride* = $C_3H_4O_2$: obtained from lactic acid. *L. fermentation*=Fermentation resulting in lactic acid, as in the conversion of sugar of milk and grape sugar into lactic acid. *L. series of acids*= $CnH_{2n}O_3$: a series, of which lactic acid is the type

Lactide, (lak'tīd). [Lactic, *q.v.*]= $C_3H_4O_2$ =Lactic anhydride: a white crystalline substance, obtained from lactic acid.

Lactin, (lak'tin). [L. *lac,* milk.]=Sugar of milk=Lactose, *q.v.*

Lactometer, (lak-tom'e-ter). [L. *lac,* milk: Gk. *metron,* measure.] An instrument for determining the quality of milk by means of its density.

Lactone, (lak'tōn). [L *lac,* milk.]= $C_5H_8O_2$: a volatile liquid obtained during the distillation of lactic acid.

Lactose, (lak'tōs) [L. *lac,* milk.]= $C_{12}H_{22}O_{11}$ H_2O=Sugar of milk: a crystalline variety of sugar obtained from milk.

Lactous, (lak'tus). [L. *lac,* milk.] *L. fermentation*=Lactic fermentation, *q v.*

Lactuca, (lak-tū'ka). [The Latin name]= Lettuce: an herb, with milky juice, belonging to Asteraceæ.

Lactyl, (lak'til). [L. *lac,* milk.]= C_3H_4O: the radicle of the lactic series.

Lacustrine, (la-kus'trin). [L. *lacus,* lake.] Belonging to a lake *L. formations:* formed at the bottom of lakes.

Lady. *L. bird*=Coccinella, *q.v.* *L.'s mantle* =Alchemilla, *q.v.* *L.'s slipper* = Cypripedium: a plant belonging to Orchidaceæ. *L.'s smock*=Cardamine pratensis: an herb belonging to Brassicaceæ. *L.'s tresses*= Spiranthes autumnalis. *L. fish*=Sillago domina. *L. fern*=Aspidium filix-fœmina.

Læmodipoda, (lē-mō-dip'o-da). [Gk. *laimos,* throat; *dis,* twice; *pous,* foot.] Crustacean animals, with two legs under the throat, belonging to Edriophthalmia.

Lævo, (lē'vō). [L. *lævus,* on the left.] Left-handed.

Lævogyration, (lē-vō-jī-ra'shun). [L. *lævo,* left; *gyrus,* circle.] = Polarization to the left hand.

Lævulosane, (lē'vu-lō-sān) [Lævulose, *q v.*] $=C_6H_{10}O_5$: an amorphous substance obtained from Lævulose by heating it so as to remove the contained water.

Lævulose, (lē'vu-lōs). [*L. lævus*, left-handed] $=C_6H_{12}O_6=$ Lævoglucose: an amorphous variety of sugar found in fruit, named from causing left-handed rotation of polarised light.

Lagenaria, (la-jē-nā'ri-a). [*L. lagena*, a bottle] = Bottle-gourd a plant, often poisonous, belonging to Cucurbitaceæ.

Lagetta, (la-jet'ta). [*L. laqueus*, noose] = Daphne lagetta = Lace bark tree: a plant belonging to Thymelaceæ.

Lagomys, (lag'ō-mis). [*Gk. lagos*, hare; *mys*, mouse.] A small quadruped, belonging to Rodentia; also called Rat-hare. *L. pusillus* = Lepus p. = Calling hare.

Lagoons, (la-gōnz'). [*It. laguna*, marsh.] A shallow lake or pond, especially if near the sea.

Lagopus, (lag'ō-pus). [*Gk. lagos*, hare. *pous*, foot] = Snow partridge: a bird belonging to Tetraonidæ. *L. mutus* = Ptarmigan.

Lagostomus, (lag-os'to-mus). [*Gk. lagos*, hare: *stoma*, mouth] = Bizcacha: a rabbit-like animal, belonging to Rodentia = Vizcacha of America, east of the Andes. *cf* Lagotis.

Lagothrix, (lag'ō-thriks) [*Gk lagos*, hare; *thrix*, hair] = Gastrimargus, *q v.*

Lagotis, (lag'ō-tis). [*Gk. lagos*, hare] = Vizcacha of America, west of the Andes: a rabbit-like animal. *cf* Lagostomus.

Lagunculapes, (lag-un-cū'la-pes) [*L lagun-cula*, small flask; *pes*, foot] A frog-like animal, known only by its fossil track *v.* Lithichnozoa.

Lagurus, (lag-ū'rus). [*Gk. lagos*, a hare, and *oura*, a tail] = Hare's tail grass. a plant belonging to Graminaceæ.

Lake, (lāk). [*Lacus*, the Latin word] 1. A large pond: a body of water surrounded by land. 2. A compound of colouring matters with metallic oxides. used as a pigment.

Lake dwellings. Remains of dwellings, usually built on piles, on the borders of lakes; some contain stone implements and bones of wild deer and wild oxen, others contain bronze implements, and bones of domestic animals.

Lamarck's classification of animals: based on degrees of sensibility:—

- Apathetic animals: polyps, tunicata, infusoria, &c.
- Sensitive animals: insects, crustacea, mollusca, &c.
- Intelligent animals: fishes, reptiles, birds, mammals.

Lamarckism, (lam'ark-izm) [Lamarck, French naturalist.] The theory of the common descent of all species of animals and plants from the simplest common original form.

Lamb's. *L. lettuce* = Valerianella olitoria. *L. succory* = Arnoseris, *q v.*

Lambdoidal suture, (lam-doi'dal). [*Gk.* letter Λ, lambda; *eidos*, form.] A joint in the skull, at the back, connecting the parietal and occipital bones; in the gorilla it is very large; the horns of ruminant animals are extensions of this.

Lamellar, (lam-el'lar). [*L. lamella*, plate] Occurring in laminæ or plates.

Lamellibranchiata, (lam-el-li-brang-ki-ā'ta). [*L. lamella*, plate: *Gk. bragchia*, gill.] = Mussels, &c.: ordinary bivalve molluscs, with a heart, gills, and foot, but no head; have no odontophore, named from lamellæ of gills; also called Phyllobranchia; are divided into Monomyaria and Dimyaria, *q v.*

Lamellicornes, (lam-el-li-kor'nēz). [*L. lamella*, plate, *cornu*, horn.] A sub-division of Coleoptera, named from the flat fan-like antennæ: includes stag-beetles, cock-chafers, &c.

Lamellirostres, (lam-el-li-ros'trēz). [*L. lamella*, plate, *rostrum*, beak.] = Ducks, geese, &c., aquatic birds, with flat beaks, belonging to Natatores.

Lamiaceæ, (lam-i-ā'se-ē). [Lamium, *q v.*] = Labiates. herbs, mostly aromatic, connecting Echiales and Bignales, include sage, thyme, mint, rosemary, &c

Lamina, (lam'i-na). [The Latin word.] = Blade: any flat portion, such as of a bone or a leaf.

Laminaria, (lam-in-ā'ri-a) [Named from its flat fronds.] An edible sea-weed, belonging to Fucaceæ.

Laminarian zone, (lam-in-ā-ri'an). [Laminaria, *q v.*] From low-water mark to a depth of about 15 fathoms: specially marked by tangles and scarlet sea-weeds; animals abundant both in number and species, usually brightly coloured.

Lamiodontes, (lam-i-ō-don'tēz) = Glossopetra: a general term for fossil teeth.

Lamium, (lā'mi-um). [The Latin name] = Dead nettle: an herb belonging to Lamiaceæ.

Lamna, (lam'na). [Proper name.] A fish belonging to Squalidæ. *L. cornubica* = Beaumaris shark.

Lamp-black. Amorphous carbon: obtained from hydrocarbons by combustion so as to burn off the hydrogen.

Lamp, Safety. A lamp surrounded by fine wire gauze, which absorbs the heat: used in coal mines.


Safety-lamp

Lamp shell = Terebratula: a marine mollusc-like animal, belonging to Brachiopoda; named from its shape.

Lamp-shells = Terebratulæ: a family of mollusc-like animals belonging to Brachiopoda.

Lampadite = Wad, *q.v.*

Lampic acid = Aldehydic acid = $C_4H_8O_3$. A compound of silver and aldehyde.

Lampris, (lam'pris). A fish belonging to Scomberidæ. *L. guttatus* = King-fish.

Lamprey, (lam'pri). [*Lamproie*, the French name.] = Lampern = Petromyzon marinus: an eel-like fish with circular sucker-like mouth.

Lampromorpha, (lam-prō-mor'fa) = Shining cuckoo: a bird found in Africa, India, and New Holland.

Lampyra, (lam-pī'ra). [*Lampyris*, the Latin name.] = Fire-fly. *v.* Lampyris.

Lampyridæ, (lam-pī'ri-de). [Lampyris, *q.v.*]

A family of beetles: some phosphorescent, all distasteful to birds and mammalia; much mimicked. *v.* Mimicry.

Lampyris, (lam-pī′ris). [The Latin name.] An insect: the type of Lampyridæ. *L. noctiluca*=Glow-worm.

Lancaster gun, (lan′kas-ter). [Mr. Lancaster.] With spiral elliptic bore, for the discharge of hard metal projectiles. *v.* Gun.

Lancelet, (lans′let). [*Lanceolatus*, the Latin name.] = Pharyngobranchii = Amphioxus lanceolatus: a little worm-like, transparent fish, 2 in. long, with pulsating vessels instead of a heart, without either cranium or brains, with no limbs, and colourless blood corpuscles.

Lanceolate, (lan′se-ō-lāt). [*Lanceolatus*, the Latin word.] Spear-shaped.

Lancet fish=Acanthurus, *q.v.*

Land. *L. bugs*=Geocorisa, *q.v.* *L. crab*= Gecarcinus, *q.v.* *L rail* = Corn crake = Crex pratensis=Rallus, *q.v.* *L. tortoise*, *v* Tortoise.

Landes, (lāngdz). [The French word.]=Heaths: the French term for uncultivated fertile land

Lands. The spaces between the grooves of a rifled gun.

Landenian, (lan-den′i-an). Strata belonging to Lower Eocene, found in Belgium.

Lane's electrometer. [Mr. Lane.] A small Leyden jar, the charge of which is taken as the unit.

Langley. *Granules of L.*, *v.* Granules

Langreen's map of the moon: in which the craters, &c., are named after celebrated philosophers. *v.* Moon.

Language, (lang′wāj). [L. *lingua*, tongue.] *Science of L.*=Glottology.

Languages, (lang′wa-jez). [Language, *q v.*] *Classification of L.* by Max Muller.

- Aryan.
- Semitic.
- Ural-Altaic.
- Ind-Chinese.
- Dravidian.
- Malay-Polynesian.
- Kafir.
- Polysynthetic (American).

Laniadæ, (lan′i-a-dē). [Lanius, *q.v.*]=Shrikes: birds connecting Accipitres and Passeres, *q.v.*

Laniary teeth, (lan′i-a-ri). [L. *lanio*, I tear in pieces.]=Canine teeth. *v.* Teeth.

Lanius, (lan′i-us). [L. *lanius*, butcher.]= Shrike=Butcher bird: an insectivorous bird, belonging to Dentirostes.

Lantanuric acid. [Allantoin and Uric, *q v.*] $=C_3H_4N_2O_3$: an acid deliquescent substance obtained from uric acid; probably=Allanturic acid, *q.v.*

Lantern. *L. fly*=Fulgora: an insect belonging to Hemiptera. *L. of Aristotle:* a pyramid formed by the five jaws of a star fish, the surfaces serve as grindstones for food. *Magic L.*: an optical apparatus, by which small images are magnified and shown upon a screen.

Lanthanum, (lan-thā′num). [Gk. *lanthano*, I hide.]=La: a rare substance; one of the earth-metals; named from long being comfounded with cerium.

Lanugo, (la-nū′go). [The Latin word.] Fine woolly hair with which the human fœtus is covered during the sixth month; also used for the down of fruits, &c.

Lapidary, (lap′i-da-ri). [L. *lapidarius*, relating to stone.] One who cuts and polishes stones: a stone worker who uses only precious stones.

Lapidification, (lap-i-dif-i-kā′shun). [L. *lapis*, stone; *facio*, I make.] The formation of solid rock under water.

Lapilli, (la-pil′li). [L. *lapillus*, a small stone.] Porous, stony concretions thrown out from volcanoes: not applied to lava.

Lapis lazuli,(lap′is-laz′ū-lī)=Ultra-marine, *q v.*

Lapis ollaris=Potstone, *q.v.*

Laplace's theorem. That the earth was once a fiery fluid globe.

Lappa, (lap′pa). A plant belonging to Asteraceæ

Lapps=Laplanders: nomadic and dwarfish inhabitants of the N. coast of Scandinavia.

Lapsana, (lap-sā′na). [The Latin name.]= Nipple-wort = Swine's cress: a plant belonging to Asteraceæ.


Lapwing.

Lapwing, (lap′wing). [*Lepe-wine*, the A.-S. name.] = Vanellus: a bird belonging to Charadriadæ, also called Plover.

Larch, (larch). [Celt. *lar*, resin.]=Larix= Abies larix: a tree belonging to Pinaceæ


Larch.

Lard, (lärd). [*Lardum*, the Latin word.] Soft pig-fat: composed of stearine and oleine, *q.v.*

Lardizabalaceæ, (lär-di-zab-a-lā′se-ē). [Senor Lardizabala of Spain.]=Lardizabalads: twining shrubs, often with fragrant flowers, belonging to Menispermales.

Laridæ, (lar′i-dē). [Larus, *q.v.*]=Gulls, terns, &c.: a family of sea-birds belonging to Natatores.

Lark, (lark). [*Laverock*, the O.E. name.]= Alanda: a singing bird, belonging to Fringillidæ.


Lark.

Larkspur, (lark-sper) = Delphinium: an herb belonging to Ranunculaceæ.

Larus, (lar′us). [The Latin name.] =Gull: a sea-bird with long wings, the type of Laridæ.

Larva. Singular of Larvæ, *q.v.*

Larvæ, (lär'vē). [L. *larva*, mask.] Caterpillars: the early stage of insects, which conceals the perfect form; the first stage after the egg; *v.* Insects. *Eruciform L.*=Campodea-form = Vermiform. *Leptiform L.*= Lindia-form=Hexapodous.

Laryngeal, (la-rinj'e-al). [Larynx, *q.v.*] Belonging to the larynx.

Larynx, (lar'ingks). [*Larygx*, the Greek word.] The upper portion of the windpipe, which opens into the mouth; by means of which vocal sounds are produced.

Lasso-cells, (las'sō). [*Lazo*, the Spanish word.] =Cnidæ=Nettling cells=Thread-capsules: minute extensile weapons, not retractile, of Actiniæ.

Latent, (lā'tent). [L *lateo*, I am hidden.] Hidden: not perceptible by the senses. *L. heat:* that which is not perceptible by the senses, and does not affect the thermometer. *L. heat of steam* and other vapours: that heat which is used in the conversion of a liquid into a vapour, without being measurable by the thermometer; *v.* Steam. *L. heat of water:* which is used to convert ice into water=79·4°C=143°F.

Lateral ventricle. A cavity in the centre of the cerebral hemispheres of the brain.

Laterite, (lat'ęr-īt). [L. *later*, brick.] A red-coloured rock, chiefly silicate of alumina and oxide of iron.

Lath, (läth). [W. *llath*, a rod.] A narrow thin strip of wood.

Latham, (lā'tham). [Dr. R. G. Latham.] *L.'s classification of mankind*—

Mongolian.	Indian.
Turanian.	Oceanic.
Caucasian.	American.
European.	African.

L.'s classification of birds—(by J. Latham.)

Land birds—	Water birds—
Rapaces.	Grallæ.
Pies.	Pinnatipedes.
Passerine.	Palmipedes.
Columbinæ.	
Gallinæ.	
Struthiones.	

Lathræa, (lath-rē'a). [Gk. *lathraios*, hidden.] =Tooth-wort: a plant, parasitic on roots of trees, &c., belonging to Orobanchaceæ.

Lathyrus, (lath'i-rus). [*Lathyros*, the Greek name.]=Everlasting pea: an herb belonging to Leguminaceæ.

Latitude, (lat'i-tūd). [*Latitudo*, the Latin word.] Distance measured on the surface of the globe north or south of the equator. *L. of a star*=Angular distance from the ecliptic. *Degree of L.*=60 nautical miles=60 knots= 69½ statute miles.

Latrielle, (lat-ri-el'). [M. Latrielle.] *L.'s classification of birds*—

Terrestrial—	Aquatic—
Rapaces.	Grallæ.
Passeres.	Palmipedes.
Grimpeurs.	
Passerigalli.	
Gallinacea.	

Lattice, (lat'tis). [F. *lattis*, lath-work.] Interlaced bars of wood or metal, used for windows, doors, blinds, &c.

Latus rectum, (lā'tus rek'tum). [The Latin words.] The ordinate of a conic section, which is drawn through the focus. *v.* Ordinate

Laudanum, (law'da-num). [*Ladanum*, the Latin word.]=Tincture of opium: a compound of opium and alcohol, used as a narcotic.

Laughing. *L. crow* = Cinclosoma erythrocephalus: a bird belonging to Merulidæ. *L. gas*=Nitrous oxide=Protoxide of nitrogen: which, when inspired, produces a peculiar kind of intoxication. *L. jackass*=*L. kingfisher*=Dacelo gigantea: a bird of New Zealand. *L. thrush*=Trochaloptera phœniceum.

Launa, (law'na). A tree of Guiana, with lemon-like fruit, the juice of which is used as a dye.

Lauraceæ, (law-rā'se-ē). [Laurus, *q.v.*]= Laurels: trees, with apetalous flowers and fragrant leaves, belonging to Daphnales.

Laurel, (law'rel). [*Laurus*, the Latin name.] =Sweet Bay: an evergreen tree belonging to Lauraceæ. *American L.*=Kalmia. *L. cherry* =Cerasus.

Laurentia, (law-ren'shi-a). An edible seaweed belonging to Algæ.

Laurentian, (law-ren'shi-an). [St. Lawrence River.] Crystalline rocks of great thickness, the oldest known rocks, which contain very few fossils, and belong to the Primary division of formations.

Lauric acid, (law'rik)=$C_{12}H_{24}O_2$: obtained from cocoa-nut oil.

Laurin, (law'rin). [Laurus, *q.v.*] An alkaloid principle found in the laurel.

Laurus, (law'rus). [The Latin name]= An evergreen tree: the type of Lauraceæ. *L. nobilis*=Sweet bay. *L. chloroxylon*= Greenheart, *q.v.*

Laurustine, (law'rus-tīn)=Viburnum tinus: a plant belonging to Caprifoliaceæ.

Lauryl, (law'ril). [Laurus, *q.v.*] The radicle of lauric acid.

Laurylene, (law'ri-lēn). [Laurus, *q.v.*] A hydrocarbon obtained from naphtha.

Lava, (lä'vä). [L. *lavo*, I bathe.] Used for any molten matter flowing from volcanoes: properly limited to such as has reached the surface. *v.* Trap.

Lavandula, (la-van'du-la). [The Latin name.] An aromatic plant belonging to Lamiaceæ. *L. vera* = Lavender. *L. latifolia* = Spike lavender.

Lavatera, (lav-a-tē'ra). [M. Lavater of Switzerland.]=Tree mallow: a plant belonging to Malvaceæ.

Lavender, (lav-en-dęr). [Lavandula, *q.v.*]= Lavandula, *q.v.* *Sea L.*=Statice.

Lawn, (lawn). [L. *linum*, flax.] A woven fabric made of fine linen.

Laws of motion. 1. A body if at rest will continue so; or, if moving, will continue to move in a straight line with uniform velocity, until acted on by some external force. 2. Every force acting on a body affects its motion equally, whether it act singly or in combination with others. 3. Action and re-action are equal and opposite.

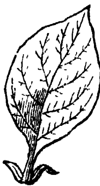
Lawsonia, (law-sō'ni-a). [Mr. W. Lawson.]=Henna, *q.v.*: a plant belonging to Lythraceæ.

Laying off. The art of planning a ship's hull.

Lazulite, (laz'ū-līt). [*Lazulum*, the Latin word.]=Voraulite: a mineral, chiefly phosphate of aluminum, coloured blue by phosphate of iron; also called Azurite, Blue-spar, &c.

Lead, (led). [The A.-S. word.]=Plumbum=Pb'': a soft, bluish-white, malleable metal, much used in building and in making type-metal, glass, &c. *L. glance*=Galena, *q.v.*: the common ore of lead. *L. group* of minerals: includes galena, cerussite, pyromorphite, and mimetite, all soft and heavy. *L. line:* a line used to measure the depth of the sea, rivers, &c. *v.* Sounding lead. *L. plant*, of Mexico=Amorpha canescens. *L. tree:* a tree-like deposit of metallic lead when a piece of zinc is placed in a solution of acetate of lead, also called Arbor Saturni *L. wort*=Plumbago. *q.v.* *L. worts*=Plumbaginaceæ, *q.v.* *Black L.*=Graphite, *q.v.* *Red L.*=Minium, *q.v.* *Sounding L.*, *v.* Sounding-lead. *White L.*=Cerussite: carbonate of lead.

Leaf, (lēf). [The A.-S. name.] An expansion of the stem of a plant. *Sessile L.:* having no stalk. *Water L.* = Hydrophyllum, *q.v.* *L. bat*=Vespertilio soricinus=Glossophaga. *L. butterfly*=Kallima. *L. carrying ant*=Œcodoma cephalotes: an ant of Brazil, which uses leaves to grow fungi on, which it uses for food. *L. insect*=Mormobyce phyllodes. *L. insects*=Mantidæ: belonging to Orthoptera; resemble leaves of trees. *v.* Mimicry. *L. lichens*=Parmeliaceæ.


Leaf

Leaflike=Foliaceous, *q.v.*

League, (lēg). [W. Llech=a stone.]=3 miles: a measure of length. *Sea L.*=3 nautical miles=nearly 3½ miles.

Leap-year=Bissextile, *q.v.*

Least common multiple. The smallest number which can be divided, without there being a remainder, by any given numbers is the least common multiple of those numbers. Ex.: 12 is the least common multiple of 2, 3, 4, and 6.

Leather, (leтн'ẹr). [*Ledher*, the A.-S. word.] A permanent modification of the hides of animals, resulting from the union of the contained gelatin with the tannic acid in which they are steeped. *L. cloth:* a cloth made to resemble leather in appearance. *L. jackets:* the New Zealand name for file fishes. *L. wood*=Dirca palustris: has tough, leathery bark. *Chamois L.*: soft leather prepared from the skin of the Chamois goat. *Enamelled L.*: coated with varnish, but capable of being bent without cracking. *Japanned L.*: coated with varnish so as to have a surface as smooth as glass. *Morocco L.*: the tanned skin of the Barbary goat. *Russia L.*: dyed with aromatic dye, and not subject to injury from damp or insects. *Vegetable L.*: linen covered with a coating of Indian-rubber. *Wash L.*: a soft, rough, kind of leather, usually prepared from sheepskin.

Leaven, (lev'n). [*Levain*, the French word.] Dough that has commenced to ferment; used instead of yeast.

Leaves, (lēvz). [Leaf, *q.v.*] In Botany: expansions of the stem; usually consist of a blade and stalk. *v.* Goethe.

Leay. *v.* M'Leay.

Lecanora, (lē-ka-nō'ra)=Cudbear, &c.: an Alpine lichen, from which a dye is procured. *L. Tartarea*=Cudbear.

Lecanoric acid, (le-ka-nō'rik). [Lecanora, *q.v.*] =Orsellic acid=$C_8H_8O_4$: a white crystalline substance obtained from Lecanora.

Lecanorine, (lek-a-nō'rīn). [Lecanora, *q.v.*] A colouring matter found in the lichen Lecanora and others=Lecanoric acid.

Lecythidaceæ, (lē-sith-i-dā'se-ē). [Gk. *lekythos*, vase.]=Lecyths: large tropical trees, with large showy flowers, belonging to Myrtales, some immensely high, named from the shape of the vase.

Leda, (lē'da). [Classical.] A small marine bivalve shell found in Tertiary rocks.

Ledum, (lē'dum). A plant belonging to Ericaceæ. *L. palustre:* used in the tanning of Russian leather.

Leech, (lēch). [*Læce*, the A.-S. name.]=Annelida suctoria=Hirudo medicinalis. *v.* Leeches.

Leeches, (lē'chez). [Leech, *q.v.*] Fresh-water, aquatic, hermaphrodite, vermiform animals, belonging to Hirudinea, *q.v.*

Lee-way. The difference between the intended and real course of a ship.

Leek, (lēk). [*Leac*, the A.-S. name.]=Allium, *q.v.* *Sand L.*=Allium scorodoprasum. *Wild L.*=Allium ampeloprasum.

Legume, (le-gūm'). [The Latin name.]=Pod: a dry carpel, opening along the sides and at one end, and having a placenta on one side. Ex.: Pea. *cf.* Follicle.

Legumin, (le-gū'min). [Legume, *q.v.*] $C_8H_{14}N_2O_6$: an albuminoid substance found in seeds of Leguminaceæ; also called vegetable casein.

Leguminous plants, (le-gū'min-us). [Legume, *q.v.*]=Fabaceæ, *q.v.*=Leguminaceæ=Leguminosæ: a very numerous and varied group of plants forming a sub-division of Dicotyledons.

Leidenfrost's phenomenon=Spheroidal condition, *q.v.*

Leiodon, (lī'ō-don). [Gk. *leios*, smooth; *odous*, tooth.] An animal known only by fossil remains, belonging to Lacertilia.

Lemma, (lem'ma). [The Greek word.] A preliminary proposition in a course of reasoning.

Lemming, (lem'ming)=Mus lemmus=Myodes lemmus=Lapland Marmot: a small rat-like animal belonging to Muridæ; also called Georychus.


Lemming.

Lemna, (lem'na).=Duck-weed: a plant, consisting of fronds, bearing flowers on the edge, the type of Lemnaceæ.

Lemnaceæ, (lem-nā'se-ē). [Lemna, *q v*]= Lemnads = Duckweeds = Pistiaceæ: small fronds, with very few flowers, common in stagnant waters, belonging to Fluviales, the lowest known form of phanerogamous plant-life.

Lemniscate, (lem'ni-skāt). [*Lemniscus*, a ribbon or bow.] A curve, in the form of the figure 8.

Lemon, (lem'on). [*Limon*, the Spanish name.] =Citrus limonum: a plant, belonging to Aurantiaceæ, the fruit of which is edible. *L grass.* Andropogon citratum.

Lemon, oil of=$C_{10}H_{10}O_5$: obtained from lemons and oranges

Lemons, salt of=Potassic binoxalate.

Lemur, (le'mur). [L. *Lemur*, ghost] A small nocturnal animal, resembling the ape, found in Madagascar, belonging to Quadrumana.

Lemuridæ, (lē-mū'ri-dē). [Lemur, *q.v.*, Gk *eidos*, form] A sub-division of Primates, *q v.*: animals belonging to Quadrumana, chiefly found in Madagascar, which connect Marsupiata and Simiadæ

Lemurinæ, (lē-mū'ri-nē). [Lemur, *q.v.*] A sub-division of Lemuridæ, including the lemur, hapalemur, &c.

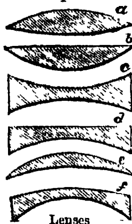
Lemuroidea, (lē-mū-roi'de-a) [Lemur, *q.v.*, Gk. *eidos*, form] A family of animals, belonging to Quadrumana, of which the lemur is the type

Length, measures of. Klafter=2·074 English yards, Metre=1·0936 English yards, Toise= 2·1313 English yards, Yard=3 ft.=36 inches. *v.* Tables.

Lenguas. A people of S. America.

Lens, (lenz). [L. *lens*, lentil.] Singular of Lenses, *q.v.*: the name is given from the shape. *Achromatic L.*: in which two or more lenses are arranged so as to prevent the image being coloured at the edges. *Crystalline L. of eye*: transparent and doubly-convex; between the aqueous and vitreous humours.

Lenses, (lenz'ez) [Lens, *q.v.*] Transparent bodies, usually glass, with regular curved surfaces, so that rays of light are made to converge or diverge when passing through.



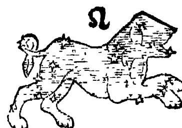
Lenses

a, double-convex; *b*, plano-convex, *c*, double-concave, *d*, plano-concave; *e*, meniscus; *f*, concavo-convex.

Lentibulariaceæ, (len-ti-bū-la-ri-ā'se-ē)=Butterworts: aquatic or marsh herbs, with monopetalous flowers, belonging to Bignonales.

Lentil, (len'til). [*Lentille*, the French name.] =Ervum lens: a plant belonging to Fabaceæ.

Leo, (lē'ō). [The Latin name] 1. The Lion: the fifth constellation of the Zodiac, containing the stars Regulus and Deneb. 2. Leo Minor: a small constellation, between Leo and Ursa Major, formed in the seventeenth century. 3. The fifth sign of the Zodiac, which now contains the constellation Cancer


Leo.

Leonis, (lē-ō'nis). [Leo, *q.v.*] Belonging to the lion. *a* Leonis=Regulus=Cor Leonis: the chief star in the constellation Leo. *ε* Leonis=Denebola=The Lion's tail.

Leontodon, (lē-on'tō-don). [Gk. *leon*, lion, *odous*, tooth.] = Hawkbit: an herb, with milky juice, belonging to Asteraceæ.

Leonurus, (lē-ō-nū'rus). [Gk. *leon*, lion, *oura*, tail]=Mother-wort: an herb, with small flowers, belonging to Labiatæ.

Leopard, (lep'ărd). [*Leopardus*, the Latin name]=Felis leopardus: a tiger-like animal, belonging to Felidæ, usually spotted, but sometimes black. *L. bane* = Doronicum and Arnica: herbs belonging to Asteraceæ.


Leopard

Lepadidæ, (lep-ad'i-dē). [Gk. *lepas*, limpet, *eidos*, form.]=Lepades: fossil, pedunculated cirripedia, found from Jurassic to recent rocks; also called Barnacles.

Lepas, (lep'as). [Gk *lepas*, limpet.]=Pedunculated cirripede=Barnacle, *q.v.*

Lepchas. An Asiatic people.

Lepides, (lep'i-dēz). [Gk. *lepis*, scale.] Small scales on plants, &c.

Lepidine, (lep'i-din)=$C_{10}H_9N$: a base, belonging to the Quinoline series, obtained from coal tar.

Lepidium, (lep-id'i-um). [Gk. *lepis*, a scale.] =Cress: an herb, with small white flowers, belonging to Brassicaceæ

Lepidodendra, (lep-i-dō-den'dra). [Gk. *lepis*, scale, *dendron*, tree.] Coal-plants, belonging to Lycopodiaceæ, of which very many remains are found in coal. *Spores of L.* =Flemingites.

Lepidodendron. Singular of Lepidodendra, *q.v.*

Lepidoganoid, (lep-i-dō-gan'oid). [Gk. *lepis*, scale, *ganos*, splendour] Ganoid fishes, covered with scales, and having a bony skeleton. *L. fishes* are a sub-division of Ganoidei, *q.v.*

Lepidogaster, (lep-i-dō-gas'ter). [Gk. *lepis*, scale; *gaster*, belly.]=Sucker: a small fish belonging to Acanthopteri.

Lepidokromite. A variety of Gothite, *q.v.*

Lepidolite, (lep-id'ō-lit). [Gk. *lepis*, scale; *lithos*, stone.]=Lithia mica: a mineral of the mica group; a silicate of alumina, lithia, &c., found in pearly scales or plates.

Lepidomelane, (lep-i-dom'e-lān). [Gk. *lepis*, scale; *melas*, black.] = Iron-lithia-mica: a

mineral of the mica group, a silicate of iron, &c., crystallising in hexagonal scales.

Lepidoptera, (lep-i-dop'ter-a). [Gk. *lepis*, scale, *pteron*, wing.] Butterflies and moths: a primary division of insects, belonging to Haustellata; *q.v.*, have four ample wings, of beautiful patterns, covered with scales. "Born as worms, become crustaceans, and finally insects."

Lepidopus, (lep-id'o-pus). A large mackerel-like fish.

Lepidosiren, (lep-i-dō-sī'ren). [Gk. *lepis*, scale, *seiren*, siren.] A fish covered with scales, but otherwise resembling the siren; it has simple filamentary limbs, and connects fishes and reptiles. *v.* Mud-fishes.

Lepidosteus, (lep-i-dos'te-us). [Gk. *lepis*, scale, *osteon*, bone.]=Bony-Pike: a fish the type of Lepidoganodei.

Lepidostrobus, (lep-i-dos'trō-bus). [Gk. *lepis*, scale, *strobilus*, cone.] Large fossil cones of Lycopods, found in great numbers in coal beds.

Lepidota, (lep-i-dō'ta). [Gk. *lepidotos*, scaly.] =Dipnoi, *q.v.*, so named when considered as a reptile.

Lepidote, (lep'i-dōt). [Gk. *lepidotos*, scaly.] Covered with lepides or scurf.

Lepidotus, (lep-i-dō'tus). [Gk. *lepidotos*, scaly.] A ganoid fish, complete remains of which are found in Lias rocks.

Leporidæ, (lep-or-i-dē). [L. *lepus*, hare, Gk. *eidos*, form.] Hares and rabbits: animals belonging to Rodentia.

Leptidæ, (lep'ti-dē). [Gk. *leptos*, slender; *eidos*, form.] Harvest-ticks. small animals belonging to Acari, *q.v.*

Leptocardii, (lep-to-kar'di-i). [Gk. *leptos*, slender, *kardia*, heart.] A sub-division of fishes, formed by Siebold, including the lancelet, having tubular hearts=Pharyngobranchii.

Leptocephalus, (lep-tō-sef'al-us). [Gk. *leptos*, slender; *kephale*, head.] An eel with a small head and tape-like body.

Leptodactylus, (lep-tō-dak'ti-lus). [Gk *leptos*, slender; *daktylos*, toe.] Narrow toed birds, known only by their footmarks. *v.* Lithichnozoa.

Leptoglossæ, (lep-tō-glos'sē): [Gk. *leptos*, slender; *glossa*, tongue.]=Slender-tongued lizards. *v.* Lizards.

Leptolepis, (lep-tol'e-pis). [Gk. *leptos*, slender: *lepis*, scale.] A ganoid fish, known only by fossil scales, found in the Lias.

Leptophina, (lep-tof'i-na). A serpent belonging to Colubridæ.

Leptosomatum, (lep-tō-sō'ma-tum). [Gk. *leptos*, slender; *soma*, body.] *v.* Nematoidea.

Lepus, (lep'us). [The Latin name.] 1. The Hare: a small southern constellation. 2. Hare, *q.v.* *L. Magellanicus*=Black rabbit of Falkland I.

Lesbos, (les-bos). *v.* Insula.

Leslie, (lez'li). [Sir J. Leslie.] *L.'s æthrioscope:* an instrument intended to measure the degree of radiation of the earth. *L. differential thermometer*, *v.* Thermometer. *L. cube:* a cubical vessel of tin having the sides coated with various substances, so that the radiating and absorbing powers of these substances for heat can be compared. *L. photometer*: *v.* Photometer.

Lethal actions. [*Lethalis*, the Latin word.] Those causing death.

Letter-lichens=Graphidaceæ, *q.v.*

Lettuce, (let'tis). [*Lactuca*, the Latin name.] =Lactuca: an herb belonging to Asteraceæ.

Leucaniline, (lū-kan'i-līn). [Gk. *leukos*, white, Aniline, *q.v.*] $C_{10}H_{21}N_3$: a base obtained from rosaniline.

Leucic acid, (lū'sik). [Gk. *leukos*, white.]= $C_6H_{12}O_3$: a crystalline acid substance obtained from Leucine.

Leucine, (lū'sin). [Gk. *leukos*, white.]=$C_6H_{13}NO_2$ = Leucimide + Water = Amido-caproic acid: a white crystalline substance, found in putrefying cheese.

Leuciscus, (lū-sis'kus). Roach, dace, &c.: a fish belonging to Cyprinidæ.

Leucite, (lū'sīt). [Gk. *leukos*, white.] A mineral substance, chiefly silicate of alumina and potash, crystallising in cubes.

Leuckart's classification of animals:—

Cœlenterata.
Echinodermata.
Vermes.
Arthropoda.
Mollusca.
Vertebrata.

Leukhæmic (lū-khē'mik). [Gk. *leukos*, white; *haima*, blood.] Relating to white blood; *i.e.*, blood having only white corpuscles.

Leukol, (lū'kol). [Gk. *leukos*, white.]=C_9H_7N =Quinoline, *q.v.*

Leukon, (lū'kon). [Gk. *leukos*, white.]=$Si_3H_4O_5$: a white powder=Hydrated oxide of silicon.

Leucyl, (lū'sil). [Gk. *leukos*, white; *hyle*, material.]=$C_6H_{10}O$ the radicle of the leucic series.

Levee, (lev'e). An American term for an embankment.

Level. 1. A plane surface. 2. An instrument for surveying *Spirit L.:* a glass tube nearly filled with spirit, when it is horizontal the bubble of air is at the centre of the top. *Water L.:* a tube with two short rectangular terminations, containing water, which stands at the same height in each when the instrument is horizontal and the ends vertical. *Sea L.:* from which the height of land is measured.

Lever, (lē'ver). [L. *levo*, I raise.] Any rod or bar, having some one fixed point, called the fulcrum, by means of which force can be transferred; and by means of which three parallel forces balance each other.


Lever.

Levigation, (lev-i-gā'shun). [L *levigo*, I grind to powder.] Pulverisation to a fine degree.

Levitation, (lev-i-tā'shun). [L. *levis*, light.] The converse of gravitation.

Levulose, (lē'vū-lōs)=Lævulose, *q.v.*

Leyden jar, (lī′den). [Leyden in Holland.] A glass jar coated partly, both outside and inside, with tin-foil; when electrified it can be discharged by connecting the coatings, when a shock or spark is given. *L. battery:* a number of such jars connected by wires.

Lias, (lī′as). Beds of limestone, marl, and clay, mostly of marine formation, remarkable for fossil remains of large lizard-like animals; a sub-division of Jurassic, *q.v.* *v.* Secondary formations. Sometimes called Gryphite limestone.

Liassic, (lī-as′sik). [Lias, *q.v.*] Belonging or related to the Lias, *q.v.*

Libavius, liquor of=Bichloride of tin.

Libellula, (lib-el′lu-la). [L. *libellus*, little book.] Dragon-fly: an insect belonging to Libellulidæ, *q.v.*; also called horse-stinger.

Libellulidæ, (lib-el-lū′li-dē). [Libellula, *q.v.*; Gk. *eidos*, form]=Dragon-flies: carnivorous insects, forming a division of Neuroptera, brillantly coloured; males usually larger than females.

Liber, (lī′ber). [The Latin word.] The inner bark of fine woody fibres; also called Endophlœum.

Liberatrix, (lī-ber-ā′triks). [The Latin name.] No 125 of the Minor Planets.

Libra, (lī′bra). [The Latin name.]=Balance: a constellation of the Zodiac. 2. The 7th sign of the Zodiac, now contains the constellation Virgo.

Libra.

Libration, (lī-brā′-shun). [L. *libra*, balance.] = Evection: an apparent displacement of any heavenly body, owing to its motion.

Lice, (līs). Wingless insects, belonging to Hemiptera; also considered as belonging to Aptera. *Wood L.* =Isopoda.

Lichanotus=Indri: an animal belonging to Lemuroidea: found in Madagascar.

Lichen, (lī′ken). [The Latin name.] *v.* Lichenales.

Lichenales, (lī-ke-nā′lēz). [Lichen, *q.v.*] Perennial flowerless plants of cellular tissue, multiplied by spores, found on the surface of rocks, trees, &c., growing only in light; combining the vegetation of Algales with the fruit of Fungales, forming a division of Thallogens, *q.v.*

Lichenic, (li-ken′ik). [Lichen, *q.v.*] Relating to Lichens. *L. acid*=Fumaric acid, *q.v.*

Lichenin, (lī′ke-nin). [Lichen, *q.v.*] $C_6H_{10}O_5$: a substance obtained from Iceland moss.

Lichens, (lī′kenz). [Lichen, *q.v.*] Plants belonging to Lichenales, *q.v.* *Cudbear L.* =Lecanora tartarea. *Dog L.* = Peltidea canina. *Jelly L.*=Collemaceæ. *Letter L.*= Graphidaceæ. *Lung-wort L.*=Sticta pulmonaria. *Rockhair L.*=Alectoria jubata. *Stone L.*=Parmelia parietina. *Tripe de Roche L.*=Gyrophora=Lecanora esculenta. *Written L.*=Opegrapha scripta.

Lichens. Colouring matters, &c., obtained from: Archil, Erythrin, Evernic acid, Gyrophoric acid, Lecanoric acid, Litmus, Orcin, &c.

Lichtenberg's figures. A mixture of sulphur and red lead becomes electrified (the sulphur negatively, the red lead positively) if such a mixture be spread over a cake of resin on which lines have been traced by a positively electrified substance, and other lines by a negatively electrified one, and figures are formed by the separation of the sulphur and red lead.

Licking insects=Hymenoptera. *v.* Insects.

Lieberkuhn, glands of. In the walls of the intestines.

Liebig, (lē′big). [Prof. Liebig.] *L.'s classification*—1. Of crops: according to the alkaline, flinty, or lime-like character of their ashes. 2. Of foods: according to their support of nutrition or respiration *L.'s condenser:* a retort in the head of which water is boiled, while the neck is kept cool by a stream of cold water. *L.'s theory of fermentation.* *v.* Fermentation.

Ligament, (lig′a-ment). [*Ligamentum*, the Latin word.] Bands of fibrous tissue connecting bones, &c. *cf.* Tendon.

Light, (līt). [*Lyht*, the A.-S word.] A variety of molecular motion; a form of energy; of which our eyes only can take cognizance, and which gives us the perception of form and colour. *Sources of L.:* the sun, stars, chemical combination, electricity, &c. *Homogeneous L.*=*Monochromatic L.*=Light of one colour only. *Electric L.*, *v.* Electric. *Chemical action of L.*= Actinism. *v.* Photography. *Diffraction of L.*, *v.* Diffraction. *Dispersion of L.*, *v.* Spectrum. *Measurement of L.*=Photometry. *Polarisation of L.*, *v.* Polarisation. *L. mill* =Radiometer, *q.v.*

Light-balls. Projectiles, filled with combustibles that burn with a bright flame for several minutes: used in warfare to see by.

Lightning, (līt′ning). [Light, *q.v.*] A discharge of atmospheric electricity. *L. bridge:* a short interval between two wires, which a current of great tension will cross and so pass away from delicate apparatus. *L. conductor:* a metallic rod or band, fixed to a ship, house, &c., and projecting above the highest part, intended to carry off lightning harmlessly by conducting it to the ground. *L. spectrum:* the spectrum of a flash of lightning. *L. tubes*=Fulgurites, *q.v.*

Lights. *Artificial L.:* obtained by burning coal-gas, candles, oil, &c., *v.* Drummond L. and Electric L. *Dead L.*, *v.* Dead light. *Northern L.*, *v.* Aurora borealis. *Southern L.*, *v.* Aurora australis.

Lignin, (lig′nin). [L. *lignum*, wood.] 1.= Cellulose: one of the constituents of wood. 2. A compound substance encrusting the cellulose framework of plant tissues.

Lignite, (lig′nīt). [L. *lignum*, wood.]=Brown coal: coal retaining its woody structure= Forest bed.

Lignone, (lig′nōn)=Xylite: a volatile liquid obtained from wood spirit.

Lignum vitæ, (lig'num vī'tē). [The Latin name.] The hard and heavy wood of Guaiacum, *q.v.*

Ligula, (lig'ū-la). [L. *ligula*, a tongue or projection.] Used of any small strap-like process in animals or plants

Ligulate, (lig'ū-lāt) Strap-like.

Ligusticum, (lig-us'ti-kum). [Liguria.]=Lovage: an herb belonging to Apiaceæ

Ligustrum, (lig-ust rum). [The Latin name.] =Privet: a shrub belonging to Oleaceæ.

Lilac, (lī'lak). [Pers. *lilag*, flower] 1.=Syringa: a plant belonging to Oleaceæ. 2. =Melia azedarach of Madeira=White cedar of New Zealand.

Liliaceæ, (lil-i-ā'se-ē) [Lily, *q v.*]=Lily-worts: lily, onion, yam, &c.; plants, with narrow leaves and large showy flowers, belonging to Liliales.

Liliales, (lil-i-ā'lēz). [Lily, *q.v.*] Gaily-flowered plants, hypogynous and bisexual, forming a division of Endogens.

Lilium, (lil'i-um). [*Lilium*, the Latin name.] =Lily: an herb, the type of Liliaceæ, *q.v.*

Lily, (lil'i). [Celt. *li*, whiteness.] = Lilium, *q.v.* *L beetle*=Crioceris. *L. encrinite*, *v.* Encrinites. *Lent-L.*=Narcissus. *Tiger L.* =Lilium monodelphum. *Lily of the valley* = Convallaria. *Purple lily*=Martagon. *Lesser water L.*=Hydrocharis morsus-ranæ.


Lily.

Lima, (lī'ma). A very locomotive mollusc, with crimson mantle, found in Phillipine Islands, at bottom of water. *L. beds*=Lower Lias rocks.

Limacidæ, (lī-mā'si-dē). [Limax, *q.v.*]=Slugs: molluscous animals belonging to Gasterpoda.

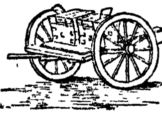
Limæ, (lī'mē). [Plural of Lima, *q.v.*] Found in Oolite rocks. *L. grandis*, formerly Plagiostoma grandis, found in Lower Lias.

Limax, (lī'maks). [The Latin name.]=Slug= Garden-snail. *v.* Limacidæ.

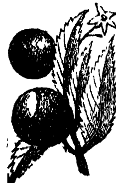
Limb, (lim). [*Limbus*, the Latin word.] Edge; branch; as branch of a tree, arm or leg of an animal, fin, wing, &c.; in astronomy =Edge of a circular body, as of the sun, moon, &c.

Limbs. In Vertebrata: never more than four; in Invertebrata: more varied as to number and modification. *Pectoral L.:* corresponding to arms; related to the breast. *Pelvic L.:* corresponding to legs; related to the pelvis. *Thoracic L.:* related to the throat.

Limber, (lim'bər). The fore part of a travelling gun-carriage.


Limber.

Lime, (līm). [L. *limus*, slime.] 1. A mineral =Oxide of calcium= CaO: much used as a manure, and as a constituent of mortar. *Hydraulic L.* contains silica or clay, and hardens under water. *Poor L.:* impure L. which slakes slowly. *Pure L.* =*Rich L.*=*Fat L.*=*Quick L.:* white and infusible, and slakes rapidly. *Slaked L.* =Calcic hydrate of lime: plastic and used as mortar. 2. = Tilia = Linden: a tree belonging to Tiliaceæ. 3. = Citrus limetta: a tree belonging to Aurantiaceæ. *Oil of L.* =From Citrus limetta. *L. light* = Drummond light. *Chloride of L.*=Bleaching powder.


Lime.

Limestone, varieties of: alabaster, chalk, majolica, marl, pisolite, &c.: when hard enough to be polished =Marble. *Gryphite L.*=Lias. *Galena L.* =Upper Magnesian L.

Limestones= Calcareous rocks: varieties of carbonate of lime.

Limicolæ, (lim-i-kō'lē)=Mud-worms: animals belonging to Annelida.

Limonin, (lim'ō-nin). [Lemon, *q.v.*] The bitter principle of lemons, oranges, &c.

Limonite, (lī'mō-nīt). [Gk. *leimo*, meadow.] =Brown-hæmatite: one of the iron group of minerals, amorphous, chiefly peroxide of iron, found in bogs and marshes; also called hydrate of iron.

Limosa, (li-mō'-sa). [L *limosus*, muddy.]= Godwit: a bird, belonging to Grallatores, found on the sea-shore; the female is larger and more lightly coloured than the male.

Limosella, (lim-ō-sel'la). [L. *limus*, mud]= Mud-wort: a small aquatic herb belonging to Scrophulariaceæ.

Limpet, (lim'pet). [*Lepas*, the Latin name.] =Patella: a molluscous animal belonging to Gasteropoda. *Fresh-water L* =Ancylus.

Limulus, (lim'ū-lus). [L. *limulus*, sideways.] King crab: an animal belonging to Crustaceæ. *L. moluccanus:* 3 ft. long, 1½ ft. wide=Horse-shoe crab.

Linaceæ, (lī-nā'se-ē). [Linum, *q.v.*]=Flax-worts: herbs and shrubs with fugitive flowers and strong fibres, belonging to Geraniales.

Linaria, (lin-ā'ri-a). [Linum, *q.v.*] 1.=Toad-flax: a plant belonging to Scrophulariaceæ. *L. spuria*=Male fluellin. 2 A bird belonging to Fringillidæ. *v.* Linnet. *L. montaria* =Twite=Mountain linnet

Linden, (lin'den). [*Lind*, the A.-S. name.]= Tilia, *q.v.*

Linden-blooms=Tiliaceæ, *q.v.*

Lindley's arrangement of plants. In classes arranged according to characters of nutrition; and sub-divisions arranged according to character of reproduction.

Flowerless plants—	*Flowering plants—*
Thallogens—	Rhizogens.
Algales.	Endogens.
Lichenales.	Dictyogens.
Fungales.	Gymnogens.
Acrogens—	Exogens—
Muscales	Dichnous.
Lycopodales.	Hypogynous
Filicales.	Perigynous.
	Epigynous.

Line. Extension in one direction only: of which the length only is considered. *Actinic*

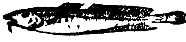
L.: the imaginary line passing through all the points on the earth's surface at which the dipping needle is horizontal. *Agonic L.:* a line connecting the points where the geographical and magnetic meridians coincide. *Equinoctial L.* coincides with equator: where the plane of the equinoctial cuts the earth. *Gunter's L.* on Slide rule. *Isoclinic L.:* a line passing through all the points where the dipping needle makes the same angle. *Isodynamic L.:* a line passing through all the points at which the magnetic attraction is the same. *Isogonic L.:* a line passing through the points where the angle of a declination compass is the same. *L. of collimation*=Line of sight, *v.* Collimation.

Lineæ, (lĭ-nē'ē). [Linum, *q.v.*]=Linaceæ, *q.v.*

Linen, (lin'en). [L. *linum,* flax.] A woven fabric made of flax.

Lines, (līnz) [Line, *q.v.*] *Kirchhoff's L.*=*L. of spectrum.* *v.* Spectrum.

Ling, (ling). [1. A.-S. *lang,* long. 2. The Icelandic word] 1 =Lota molva: a fish, resembling the cod, belonging to Gadidæ. 2.= Heath, *q v.*


Ling

Lingual, (ling'ū-al). [L. *lingua,* tongue.] Relating to the tongue.

Lingula, (ling'ū-la). [L. *lingula,* little tongue.] A brachiopod, with a horny bivalve shell and long fleshy peduncle. *L. flags:* a thick bed of flagstones and slates, belonging to Cambrian rocks.

Lingulella=Lingula, *q.v.*

Linnæa, (lin-nē'a). [Linnæus.] A slender evergreen shrub, belonging to Caprifoliaceæ.

Linnæan nomenclature=Binary nomenclature in which each animal or plant has a double name, the first the generic name or name of the genus, the second the specific name or name of the species

Linnæus's arrangement. 1. Of plants, according to the organs of reproduction, the stamens, and pistils·—

Phanerogamia: divided into 23 classes.
Cryptogamia: one class only.

2. Of Animals:—

Mammalia and Birds, with warm red blood and double heart.
Reptiles and Fishes with cold red blood and single heart.
Insects and Worms (including all known invertebrata).

Linne, (lin'ne). [Linnæus.] 1. A crater in the moon 10 miles in diameter. *v.* Moon.

Linnet, (lin'net). [*Linot,* the French name.] =Linota: a song bird belonging to Fringillidæ.


Linnet

Linoleic, (lin-ō'lik). [*Linseed* and *Oleic.* *q.v.*] $C_{16}H_{28}O_2$ = Papaveroleic acid: an oily substance found in linseed oil, &c.

Linolein, (lin-ō'lin). [*Linseed* and *Olein.*] A variety of olein, obtained from linseed oil.

Linosyris, (lin-o-sī'ris)=Goldielocks: an herb belonging to Asteraceæ.

Linoxyn, (lin-oks'in). [*Lin*oleic and *Oxy*gen.] A compound of linoleic acid and oxygen.

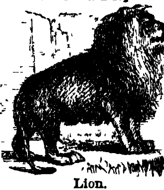
Linseed oil, (lin'sēd). A fixed oil from seeds of Linum; the type of drying oils. *v.* Oils.

Lint, (lint). [A.-S. *linet,* flax.] The soft woolly part of linen, separated and used as a dressing for wounds.

Lintel, (lin'tel). [*Linteau,* the French word.] A small bressumer, as across a window or doorway

Linum, (lī'num). [The Latin name]=Flax: a plant belonging to Linaceæ, the fibres of which are used to make linen

Lion, (lī'on). [*Leo,* the Latin name.]=Felis: a polygamous animal belonging to Felidæ, *q v.* *Maneless L.*=Camel tiger. *L. ant*= Myrmecleon formicarius.


Lion.

Lionnesse, (lī-on-nes'). Land, now under the sea, said to have once connected Cornwall and the Scilly Isls.

Liparis, (lī'pa-ris) [Gk. *liparos,* glossy] 1. An herb belonging to Orchidaceæ. *L. Loeselii*=Fen orchis. 2 =Sea snail. a fish belonging to Discoboli; *v.* Sucking Fishes. 3. An insect. *L. dispar*=Gipsy moth.

Liparite, (lī'pa-rīt)=Fluor-spar.

Lip, (lip). [*Lippa,* the A.-S. word.] Generally the edge or border: specially the edge of the mouth. *L. plate*=Hypostome. *Hare L.:* one still in two pieces, which have not yet been joined

Lipic acid, (lip'ik). [Gk. *lipos,* fat.]=$C_5H_8O_5$: obtained by the action of nitric acid on olein.

Lipuris, (lip'ū-ris)=Phascolarctos. an animal belonging to Marsupialia. *L. cinereus*= Koala.

Liquation, (līk-wā'shun). [L. *liquo,* I melt.] The melting of the more fusible metal of an alloy, so as to remove it.

Liquefaction, (lik-wē-fak'shun). [L. *liquidus,* liquid; *facio,* I make] Melting or dissolving.

Liquid, (lik'wid). [*Liquidus,* the Latin word.] =Fluid: intermediate between the solid and aeriform conditions. *Fixed L.,* one which cannot be boiled without being chemically decomposed. *Spheroidal condition of L., v.* Spheroidal state. *Volatile L.,* one which evaporates before being decomposed by heat. *L. veins:* really a series of drops.

Liquidambars, (lik-wid-am'barz). [Liquid and Amber, *q.v.*]=Altingiaceæ: large trees, belonging to Amentales, yielding various balsams or gums.

Liquor. *L. potassæ:* a solution of potassic hydrate in water. *L. sanguinis:* the fluid portion of blood, consisting of serum and fibrin.

Liquorice, (lik'ẹr-is). [Glycyrrhiza, *q.v.*]= Glycyrrhiza glabra: a plant belonging to Fabaceæ. *Wild L.*=Ononis arvensis.

Liriodendron, (lir-i-ō-den'dron). [Gk. *leirion*, lily, *dendron*, tree.] American poplar=Canoe-wood=White-wood=Virginian poplar: a large tree belonging to Magnoliaceæ. *L. tulipifera*=Virginian tulip

Lissencephala, (lis-sen-sef'a-la). [Gk. *lissos*, smooth, *egkephalos*, brain.]=Insectivora; cheiroptera, &c.: Owen's term for a division of Mammalia having a smooth brain. Fossil remains found in Secondary rocks.

Listera, (lis-tē'ra). [Dr. Lister.] A plant belonging to Orchidaceæ. *L nidus-avis*=Bird's nest orchis. *L. ovata*=Tway-blade.

Literal equation. One in which the co-efficients are letters.

Litharge, (lith'arj). [*Litharqurus*, the Latin name.]=Plumbic oxide=PbO *Red L.*="L. of gold." *Yellow L.*="L. of silver," named from their colours.

Lithia, (lith'i-a). [Gk. *lithos*, stone.]=Li_2O=Oxide of lithium: one of the alkaline earths, *q v.*; corrodes platinum.

Lithic, (lith'ik). [Gk. *lithos*, stone] Belonging to stone. *L. acid*=Uric acid, *q.v.*

Lithichnozoa, (lith-ik-nō-zō'a) [Gk. *lithos*, stone, *ichnos*, track, *zoon*, animal] Track-discovered animals, known only by the fossilised tracks such as foot-marks, tail-marks, fin-marks, &c. *Hitchcock's classification of L.*:

Marsupialia
Cunoid=Doglike.
Ornithoid=Birdlike.
Loricoid, with bony scales.
Pachydactylous=Thick-toed birds.
Leptodactylous=Narrow-toed birds.
Batrachians.
Lizards.
Chelonians.
Fishes.
Crustaceans.
Myriapods.
Insects.
Annelidans.

Lithium, (lith'i-um) [Lithia, *q v.*]=Li=One of the alkali metals: a white soft metal, the lightest solid body known, with great affinity for oxygen; the salts of lithium corrode platinum. It gives red lines in spectrum, and is found in many minerals and plants, meteoric stones, springs, tea, coffee, &c.

Lithofellic acid, (lith-ō-fel'lik). [Gk. *lithos*, stone; L. *fel*, gall] An acid obtained from gall stones, bezoar stones, &c.

Lithographus, (lith-og'ra-fus). [Gk. *lithos*, stone; *grapho*, I write.] A crustacean animal known only by its fossil track. *v.* Lithichnozoa.

Lithography, (lith-og'ra-fi). [Gk. *lithos*, stone; *graphe*, writing.] A method of printing from stone, on which lines are engraved. ***Chromo L.***, in which the printing is in colour, a separate stone being used for each colour.

Lithomarge, (lith'o-marj). [Gk. *lithos*, stone; L. *marga*, marl.] A mineral, chiefly silicate of aluminum and oxide of iron, a hard variety of kaolin, *q.v.*

Lithophytes, (lith'o fits). [Gk. *lithos*, stone; *phyton*, plant.] Stone-plants: coral which has a tree-like appearance.


Lithophytes.

Lithos, (lith'os). [The Greek word.] Used as a prefix implying stone.

Lithospermum, (li-thos-per'mum). [Gk. *lithos*, stone; *sperma*, seed]=Gromwell: an herb belonging to Boraginaceæ.

Lithotomy, (lith-ot'ō-mi). [Gk. *lithos*, stone, *tome*, section.] A surgical operation, having for its object the removal of calculi, or stony accretions, from the bladder.

Litmic, (lit'mic). [Litmus, *q v.*] One of the constituents of litmus.

Litmus, (lit'mus) [*Lachmuss*, the German word.] A blue dye: obtained from Rocella tinctoria and other lichens. *L. papers*: strips of paper coloured with litmus, which are reddened if acted on by acids: used as tests of the presence of acids.

Litoricola [L. *litus*, shore; *colo*, I inhabit.] A new genus of Eocene crustacea.

Litre, (lē'tr). [The French word.] Unit of measure of capacity=$(\text{decimetre})^3$=Kanne of Germany=Cubic decimetre=1¾ pints nearly. *Deci-L.*=$\frac{1}{10}$ *L.*=$6\frac{1}{10}$ cubic inches. *Deka-L.*=10 litres=2·2 gallons. *Hecto-L.*=100 litres=22 gallons.

Littoral zone, (lit'to-ral). [L. *littus*, shore] Between high and low water marks: has abundance of sea-weeds, and many individuals, but few species, of animals.

Littorella, (lit-to-rel'la). [L. *littus*, shore.]=Shore-weed: an aquatic herb, belonging to Plantaginaceæ, named from growing on shores.

Littorina, (lit-tō-rī'na). [L. *littus*, shore] A molluscous animal, belonging to Gasteropoda. *L littorea*=Periwinkle.

Liver, (liv'ēr) [*Lifer*, the A.-S. name.] A large gland or secreting organ which separates bile from the blood, and also makes glycogen from it. *L. sugar*=Glucose *L. of antimony*=Oxysulphide of antimony: a compound of oxygen, sulphur, and antimony. *L. of sulphur*: a compound of sulphur and potassium. *L. fluke*=Distoma hepaticum, belongs to Scolecida. *L. wort*=Marchantia polymorpha: a moss. *L. worts*=Hepaticæ, *q v.*=Marchantiaceæ.

Lixiviation, (lix-iv-i-ā'shun). [L. *lix*, ashes] The removal, by the action of water, of the soluble portions of any compound, especially the extraction of alkaline salts from wood ashes.

Lizard, (liz'ârd). [*Lacerta*, the Latin name.]=Lacerta: and other genera belonging to Lacertilia, *q.v.* ***Eyed L.***=Lacerta ocellata. *Grass L*=Tachysaurus Japonicus. *Green L.*=Lacerta viridis. *Flying L.*=Draco volans. *Forest L.*=Hy-

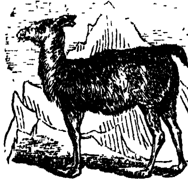

Lizard.

læosaurus, *q.v.* *Frilled L.*=Chlamydosaurus. *House L.*=Chickack, of Borneo. *Lace L.*= Hydrosaurus, *q.v.* *Sand L.*=Lacerta agilis. *Scaly L.*=Zootoca vivipara.

Lizards, (liz'ardz). [Lizard, *q.v.*]=Lacertilia, *q.v.* *v.* Lithichnozoa. *v.* Ichthyosauria.

Lizaric acid, (liz'ar-ik).=Alizarin, *q.v.*

Llama, (lä'ma). [The Peruvian name.]= Auchenia glama: an animal analogous to the camel, but found only in S. Africa: belongs to Ruminantia.


Llama.

Llanberis slates, (lan-ber'is). [L. near Caernarvon.] Thick beds of slaty rock, belonging to Longmynd group, *q.v.*

Llandeilo flags, (lan-dē'lō). [L. in Caermarthenshire.] Beds of carbonaceous slate, belonging to Lower Silurian strata.

Llandovery formation, (lan-dō've-ri). [L. in Caermarthenshire.] The lowest division of Upper Silurian rocks, connecting them with Lower Silurian.

Loach, (lōch). [The French name.]=Loche =Cobitis barbatula: a small river fish, belonging to Cyprinidæ.

Loadstone, (lōd'stōn). [A.-S. *lad*, leading; Stone, *q.v.*]=FeO, Fe_2O_3=Magnetic iron ore: a variety of iron ore which has magnetic properties.

Loam, (lōm). [*Lam*, the A.-S. word.]=Loess: a compound of sand and clay, being the fine sediment of inundations; the material of which bricks are made.

Loasaceæ, (lō-a-sā'se-ē). [*Loasa*, the typical genus.]=Loasads: American herbs, belonging to Cactales.

Lob, (lob). [W. *llob*, unwieldy.] *L. worm*= Dew-worm=Earth-worm, *q.v.*

Lobelia, (lo-bē'li-a). [Herr Lobel.] An herb, somewhat resembling tobacco, belonging to Lobeliaceæ. *L. inflata*=Indian tobacco.

Lobeliaceæ, (lo-bē-li-ā'se-ē.) [Lobelia, *q.v.*]= Lobeliads: milky herbs and shrubs, mostly poisonous, belonging to Campanales.

Lobel's catchfly=Silene armeria, *q.v.*

Lobster, (lob'ster). [*Loppestre*, the A.-S. name.] =Homarus: a crustacean animal belonging to Decapoda, *q.v.* *v.* Podophthalmia. *L.'s horns* = Antennaria antennina.


Lobster.

Lobule, (lob'ūl). [The French word.] A small lobe or projecting division. *L. of ear:* the soft pendulous portion of the external ear, nearly peculiar to man: in gorillas only rudimentary.

Loche. *v.* Loach.

Lochia, (lō-ki'a). [Gk. *locheia*, birth.] The discharge accompanying child-birth. *v.* Placenta.

Loci, (lō'si). [Locus, *q.v.*] The plural of locus, *q.v.*

Locus, (lō'kus). [The Latin word.]=Place: used in mathematics to express the position of a moving point or line.

Locust, (lō'kust). [*Locusta*, the Latin name.] =Locusta=Gryllus migratorius: an insect belonging to Orthoptera, which has auditory organs in the joints of the leg. *Honey L.*=Gleditschia triacantha. *L. insect*=Clitus pictus, feeds on locust tree. *L. tree*=Hymenæa=Robinia pseudacacia, of Guiana.

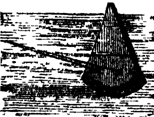

Locust.

Lode, (lōd) [A.-S. *lad*, a course.] A mineral vein.

Lodestone, (lōd'stōn).=Natural magnet=Magnetic oxide of iron, which possesses magnetism in a feeble degree. *v.* Loadstone.

Loess, (lō'es). [The German word.]=Loam, *q.v.*

Log, (log). [D. *log*, heavy.] A heavy piece of wood used to measure the rate of a ship's motion. *L. line:* the line attached to the log. The length of this line which is run out in a given interval of time shows the rate of motion. *L. ship*=Log. 2. Abbreviation of Logarithm, *q.v.*


Log.

Logan, (lō'gan). [Corruption of logging or oscillating.]=Rocking-stone: a stone which has been weather-worn, so as to be balanced on one point and easily moved to and fro.

Loganiaceæ, (lō-gan-i-ā'se-ē). [Mr. Logan.]= Loganiads: plants, mostly tropical, and usually poisonous, belonging to Gentianales.

Logarithm, (log'a-rithm). [Gk. *logos*, ratio; *arithmos*, number.] The logarithm of a number is the index of the power to which a given base must be raised to equal that number. **Ex.**: $3^4=81$; here 4 is the logarithm of 81 to the base 3. *Napier's L.* calculated to a base $E=2{\cdot}718+$ *Brigg's L* calculated with 10 as a base.

Logwood, (log'wŏd). [Log and Wood, *q.v.*]= Wood of Hæmatoxylon campeachianum: much used as a red dye-stuff.

Loiseleuria, (loi-ze-lū'ri-a). [M. Loiseleur.] A plant belonging to Ericaceæ. *L. procumbens*=Azalea.

Loligo, (lō-li'go). [The Latin name.]=Squid: Calamary; an animal resembling the cuttlefish, belonging to the Decapoda division of Cephalopoda.

Lolium, (lō'li-um). [The Latin name.]=Ryegrass: a plant belonging to Graminaceæ. *L. temulentum*=Darnel, *q.v.*

Lomaria, (lō-mā'ri-a). [Gk. *loma*, border.]= Hard Fern: a plant belonging to Filices, named from the spores being on the edge.

London. *L. clay:* a tenacious brown clay, belonging to Lower Eocene rocks, and containing fossilised traces of Mammalia. *L. pride*=Saxifraga umbrosa. *L. rocket*=Sisymbrium irio.

Long. [*Longus*, the Latin word.] *L. armed ape*=Gibbon, *q.v.* *L. eared bat*=Plecotus auritus

Longevity, (lon-jev′i-ti). [L. *longus*, long; *ævum*, life-time.] Long duration of life: greatest in animals of low grade; generally greater in invertebrate than in vertebrate animals.

Longheaded=Dolichocephalic: having the length of the head more than $\frac{5}{4}$ of the breadth. *cf.* Brachycephalic.

Longicornes, (lon-ji-kor′nēz). [L. *longus*, lon; *cornu*, horn.] A sub-division of Coleoptera: beetles with long antennæ.

Longipennatæ, (lon-ji-pen-nā′tē). [L. *longus*, long, *penna*, wing.]=Longipennes: a sub-division of Natatores or swimming birds, having large and strong wings: includes the albatross, gull, &c.

Longirostres, (lon-ji-ros′trēz). [L. *longus*, long, *rostrum*, beak.] A sub-division of Grallatores or wading birds, having long beaks: includes the snipe, woodcock, &c.

Longitude, (lon′ji-tūd). [L. *longus*, long.] The distance east or west of the meridian of Greenwich, or of some other standard meridian, measured in degrees

Longitudinal type of animals. Von Baer's term for Articulata.

Longmynd group, (long′mind). [L. hills in Shropshire.]=Bangor group. the lowest sub division of Cambrian rocks, in which fossils are rare.

Longomontanus, (lon-go-mon-tā′nus). [L. a Swedish philosopher.] A plain in the moon, 80 miles in diameter, enclosed by mountains some 2 miles high.

Longshanks, (long′shankz)=Himantopus, the long-legged plover.

Longsight=Presbytism: an affection of the eye, owing to which only objects at a long distance make a distinct image on the retina.

Longsighted=Presbyoptic. *v.* Longsight.

Lonicera, (lon-i-sē′ra). [Herr Lonicer.]=Honeysuckle=Woodbine: a fragrant shrub belonging to Caprifoliaceæ. *L. caprifolium* =Goats-leaf. *L. periclymenum*=Woodbine. *L. xylosteum*=Fly honeysuckle.

Loon, (lōn)=Colymbis glacialis: a bird belonging to Natatores; also called Northern Diver.

Loophidæ, (lo-of′i-dē). [Lophius, *q.v.*]=Anglers: a family of fishes belonging to Acanthopteri.

Loose-strife = Lysimachia and Lythrum, *q.v.*

Loose-strifes=Lythraceæ, *q v.*

Lophiadæ, (lō′fi-a-dē)=Loophidæ, *q.v.*

Lophiodon, (lō-fi′o-don). [Gk. *lophos*, crest; *odous*, tooth.] A Mammalian animal, known only by fossil remains: somewhat resembles the rhinoceros.

Lophiomys, (lō-fi′o-mis). [Gk. *lophos*, ridge; *mys*, mouse.] A small animal, belonging to Rodentia, found in Africa.

Lophius, (lō′fi-us)=Angler: a fish belonging to Acanthopteri. *L. piscatorius*=Fishing frog.

Lophobranchii, (lō-fō-brang′ki-ī). [Gk. *lophos*, tuft; Branchiæ, *q.v.*] A sub-division of fishes, *v.* Siebold, named from their bunches of gills.

Lophophore, (lō′fō-fōr). [Gk. *lophos*, crest; *phero*, I bear.] The oral disc of animals belonging to Polyzoa.

Lophornis, (lō-for′nis). [Gk. *lophos*, crest; *ornis*, bird.] The most beautiful humming-bird.

Lophortyx, (lō-for′tiks). [Gk. *lophos*, tuft; Ortyx, *q.v.*]=Tufted quail: a variety of the Quail, *q.v.*

Lophyropoda, (lō-fi-rop′ō-da). One of Hoevens sub-divisions of Crustaceans, including water-fleas, &c.

Loranthaceæ, (lor-an-thā′se-ē). [Loranthus, *q.v.*]=Loranths: evergreen parasitic shrubs with apetalous flowers and succulent fruit, belonging to Asaralps.

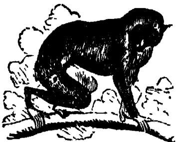
Loranthus, (lor-an′thus). [L. *lorum*, thong; Gk. *anthos*, flower.] An evergreen parasitic shrub, resembling the mistletoe, belongs to Loranthaceæ.

Lords and Ladies = Arum maculatum. *v.* Arum.

Loricata, (lor-i-kā′ta). [L. *loricata*, breast-plate.] A division of reptiles, including all those that have bony plates, such as the crocodile, tortoise, &c.

Loricoid, (lor′i-koid). [Loricata; Gk. *eidos*, form.] Having a covering of bony plates. *v.* Marsupial lithichnozoa.

Loris, (lō′ris)=1. Lazy Monkey: a lemur-like animal, found in Hindostan. *Slow L.*=Bengal Sloth. 2. A New Zealand bird.


Loris.

Lory, (lō′ri). [*Luri*, E. Indian name.]=Lorius: a parrot-like bird, remarkable for the beauty of its plumage.

Loss=Loess. *v.* Loam.

Lota, (lō′ta)=Ling: a cod-like fish, belonging to Gadidæ.

Lotus, (lō′tus). [The Latin name.]=Bird's foot trefoil: a plant belonging to Leguminaceæ. *Indian L.* = Nymphæa lotus.


Lotus.

Loudness = Amplitude, *q.v.*; also *v.* Intensity.

Louse, (lous). [*Lus*, the A.-S. word.]=Pediculus: a small insect belonging to Aptera. *Plant L.* = Aphis. *L. wort* = Pedicularis sylvestris.

Lovage=Ligusticum: an herb belonging to Apiaceæ.

Love-apple=Solanum lycopersicum.

Love-apples=Tomatoes, *q.v.*

Love-bird=Agapornis: a parrot-like bird belonging to Psittacidæ.

Lower Cretaceous=Neocomian=Lower Greensand: rocks belonging to the secondary group of strata.

Loxia, (loks'i-a). [Gk. *loxos*, oblique.]=Cross-bill. *v.* Loxiadæ.

Loxiadæ, (loks'i-a-dē). [Loxia, *q v.*, Gk. *eidos*, form.]=Cross-bills: perching birds, belonging to Conirostres, distinguished by the curved mandibles crossing each other. *v* Cross-bill.

Loxodont, (loks'ō-dont). [Gk. *loxos*, oblique; *odous*, tooth.]=African elephant=Elephas Africanus: named from the structure of its teeth.

Loxodromic, (loks-ō-drom'ik) [Gk. *loxos*, oblique, *dromos*, course.] Oblique. especially used of sailing. *L. curve:* one making a constant angle with all the meridians crossed by it.

Lubber-line. A vertical black line inside the box of a ship's compass which indicates to the steersman the position of the bow of the ship.

Lucanus, (lū-kā'nus)=Stag-beetle: an insect belonging to Coleoptera

Lucernaria, (lū-sęr-nā'ri-a). [L *lucerna*, lamp] Animals, belonging to Hydrozoa, named from their shape

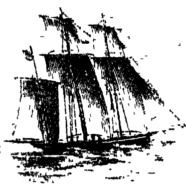
Lucifer, (lu'si-fęr) [L *lucifer*, light-bearing] *L. match* a piece of wood tipped with phosphorus and some compound containing oxygen. When rubbed quickly on a rough surface the heat inflames the phosphorus which burns in the oxygen set free

Ludlow formation. [L. in Shropshire] The uppermost sub-division of Silurian strata: the oldest in which fossil remains of fishes are found.

Lucerne=Medicago sativa, *q v.*

Lug-worm=Arenicola. an animal belonging to Annelida.

Lugger, (lug'er). A ship having a square-cut sail called a lug-sail.


Lugger.

Luidia, (lū-id'i a). A star - fish, which sheds its arms at will, connects Asteriadæ and Ophiuridæ. *v* Asteroidea.

Lumbrici, (lum-brī'-si). [Lumbricus, *q.v*]=Earthworms: animals, belonging to Annelida, which perforate the earth.

Lumbricus, (lum-brī'kus) [The Latin name.] =Earthworm. *v.* Lumbrici.

Lump-fish=Cyclopteras lumpus: a fish having a short thick body, also called Lump-sucker. belongs to Discoboli.

Lunar, (lu'nar). [L. *luna*, moon] *L. distance*, distance of moon from a given star. *L heat;* excessively small. *L. caustic;* fused nitrate of silver. *L. month:* lunation, *q v* *L. cycle* =Metonic cycle=19 years, in which civil and astronomical times coincide. *L hornet* = Sphinx crabroniformis. *L. erection.* *v.* Libration.

Lunation, (lū-nā'shun). [L. *luna*, moon.]= Lunar month=Synodic period: the time in which the moon travels round the earth and returns to the same position relatively to the earth and sun=29 days 12 hours 44 minutes 2 seconds

Lunare, (lū-nā're). [L. *lunaris*, moon-like.] One of the bones of the wrist.

Lunette, (lū-net'). [The French word.] A general term for a moon-shaped body, used especially of an outwork in a fortification and for a semi-circular window.

Lungs, (lungz). [*Lunge*, the A.-S. name] Two organs of respiration, in which the blood is purified by the addition of oxygen and removal of carbonic acid, water, &c , found in all vertebrate animals except fishes. *L -of-the-oak*=Sticta pulmonaceæ: a lichen.

Lung-wort = Pulmonaria. *q.v.* *L. lichen*= Sticta.

Lupi, (lū'pī). [Lupus, *q v*] Gen of Lupus, *q.v.*

Lupinus, (lō-pī'nus) [The Latin name]= Lupin. a plant belonging to Leguminaceæ

Lupulin, (lo'pū-lin) [L. *lupulus*, hop.] The bitter principle of the hop, Humulus lupulus.

Lupulus, (lo'pū lus) [The Latin name]= Hop a twining plant belonging to Cannabinaceæ, the seed-vessels of which are used in brewing

Lupus, (lū'pus). [The Latin name] 1 —The Wolf. one of the southern constellations 2 =Wolf, *q v.* an animal belonging to Carnivora *v.* Canis.

Luteolin, (lo'te-ō-lin). The colouring matter of Reseda luteola, used as a yellow dye

Lutes, (lūtz) [L *lutum*, mud.] Substances, such as clay, used for making air-tight joints in chemical apparatus.

Lutidine, (lō'ti-dīn)=C_7H_9N: a base belonging to the Pyridine series, *q v.*

Lutra, (lō tra). [The Latin name.]=Otter. a weasel-like animal, with webbed feet, belonging to Carnivora.

Luzula, (lō'zu-la)=Wood-rush: a plant belonging to Juncaceæ

Lycaon, (lī-kā'on). [Gk. *lykos*, wolf] *L. pictus*=Hunting dog of S. Africa: a hyæna-like animal

Lycænide, (lī-sē'ni-dē). A family of butterflies

Lychnis, (lik'nis). [Gk. *lychnos*, lamp.] 1.= Campion: an herb belonging to Caryophyllaceæ. 2. A variety of sapphire. *L. dioica* =Bachelor's buttons. *L Flos cuculi*=Ragged Robin.

Lycium, (lis'i-um). [Lycia in Asia Minor.]= Box thorn: a plant belonging to Solanaceæ.

Lycoperdon, (lī-kō-pęr'don) - Puff-ball: an edible fungus resembling the mushroom. *L. cervinum*=Indian bread.

Lycodontidæ, (lī-kō-don'ti-dē). Snakes found in S. Africa, named from Lycodon, the typical genus

Lycoperdaceæ, (lī-kō-pęr-dā'se-ē)=Gasteromycetes, *q.v.*

Lycopodales, (lī-kō-pō-dā'lēz). [Lycopodium, *q.v.*] Vascular plants, with spore cases in axils of leaves, forming a division of Acrogens, of which Lycopodium is the type.

Lycopodiaceæ, (lī-kō-pod-i-ā'se-ē). [Lycopodium, *q v.*]=Club-mosses: plants, with creeping stems, belonging to Lycopodales.

Lycopodium, (lī-kō-pō'di-um). [Gk. *lykos*, wolf, *pous*, foot.] 1.=Club-moss: a plant belonging to Lycopodiaceæ. 2.=Vegetable sulphur: the powder found in the seed cases of the club-moss, which burns very readily, and is used to produce an imitation of lightning.

Lycopsis, (lī-kop'sis). [Gk. *lykos*, wolf, *opsis*, face.]=Bugloss: a plant belonging to Boraginaceæ, named from the shape of the flowers.

Lycopus, (lik'o-pus). [Gk. *lykos*, wolf, *pous*, foot.]=Gipsy-wort: a plant belonging to Lamiaceæ.

Lydian, (lid'i-an). [Lydia, in Asia Minor.] *L. key*=Key of F: the musical scale of which F is the key-note. *v.* Keys. *L. stone* [illegible] aceous stone, used as [illegible] of minerals.

Lyencephala, [illegible] [Gk. *lyo*, I loose, *enkephalos*, brain.] A division of Mammalia by Owen, including Marsupialia and Monotremata; the latter not known fossil, but might be looked for in Primary rocks; the former found in Secondary rocks.

Lyme-grass=Elymus: a plant belonging to Graminaceæ.

Lymph, (limf). [L. *lympha*, [illegible] water.] 1. A [illegible] fluid [illegible] its red [illegible], a supply [illegible] given to the blood from the [illegible] nutritious portion of food. 2. A [illegible] fluid formed of the [illegible] of the blood-vessels, which goes back to the [illegible].

Lymphatic. *L.* [illegible] lymph to the thoracic duct [illegible] in vertebrate animals. *L.* [illegible] oval bodies forming centres of the lymphatic capillaries. *L. heart*, [illegible]

Lynton group=Lower Devonian.

Lynx, (lingks). [The Latin name.] 1. Felis lynx: an animal belonging to Felidæ. 2. A northern constellation near the pole, formed in the 17th century.


Lynx

Lyra, (lī'ra). [The Latin name.] 1.=The Lyre: one of the northern constellations, of which Vega is the chief star, and which contains many double, triple, and quadruple stars. 2. A delicate membrane in the brain, uniting the cords of the fornix.

Lyre, (līr). [*Lyra*, the Latin word.] *L. bat*=Megaderma lyr. *L. bird*=Menura superba: an Australian bird, whose tail feathers have the form of a lyre.

Lyrencephala, (li-ren-sef'a-la). [Gk. *lyo*, I loosen, *enkephalos*, brain.]=Loose-brained—Reptiles, so named by Owen, from their brain being somewhat like the loose brain of birds.


Lyre-bird

Lysimachia, (lis-i-mak'i-a). [Gk. *lysis*, loose, *mache*, strife.]=Loosestrife: an herb belonging to Primulaceæ.

Lythraceæ, (li-thrā'se-ē). [Lythrum, *q. v.*]=Loose-strifes: herbs, with showy flowers, belonging to Saxifragales.

Lythrum, (lith'rum). [Gk. *lythron*, black blood.]=Loose-strife: an herb, the type of Lythraceæ, named from the colour of the flower.

M.

Macacus, (ma-kā'kus). [*Macaco*, the Brazilian name.]=Macaque=Inuus: a monkey belonging to Simia, found at Gibraltar and in Asia.

Macaw, (ma-kaw'). [The native name.]=Macrocercus: an American parrot-like bird.


Macaw

Mace, (mās). [*Macis*, the French name.]=Aril of Myristica moschata and of Pyrrhosa tingens. *v.* Nutmeg.

Macellodus, (ma-sel'lo-dus). [Gk. *makella*, spade, *odous*, tooth.] An animal, belonging to Lacertilia, known by fossil remains.

Maceration, (mas-ser-ā'shun). [L. *Macero*, I make thin.] The action of a cold liquid upon a powdered substance, by which it is softened or partially dissolved. *cf.* Digestion.

Machairodus, (mak-ī'rō-dus). [Gk. *machaira*, sabre; *odous*, tooth.] A lion-like animal, known only by fossil remains, found in Recent rocks and in caves.

Machicolations, (mak-i-kō-lā'shunz). [*Machicoulis*, the French word.] Openings in a parapet or gallery through which projectiles may be thrown.

Macigno, (ma-sē'nyo). [The Italian name.] An Italian rock formation, coeval with London clay, but harder and more compact.

Macintosh, (mak'in-tosh). [Mr. Macintosh.] A waterproof cloth, consisting of a layer of caoutchouc between two layers of cloth, silk, &c.

Mackerel, (mak'er-el). [L. *macula*, spot.]=Scomber scombrus: a sea fish, named from its spotted appearance. *M. guide*=Belone vulgaris: a pike-like fish. *M. midge*=Motella glauca: a cod-like fish. *M. sky*=Cirro-cumulus clouds.

Macle, (mak'l). [L. *macula*, spot.]=Andalusite: a mineral, chiefly silicate of alumina, named from being partly light-coloured and partly dark.

Macles, (mak'lz)=Twin crystals=Hemitropes: crystals which look as if formed by the intersection of two crystals.

Maclura, (mak-lū'ra). [W. Maclure of America.] A plant belonging to Moraceæ.

M. aurantiaca=Osage-orange *M. tinctura* =Fustic. *v.* Morus.

Maclureite, (mak-lū'rīt). [W. Maclure of America.]=Chondrodite: a mineral, chiefly silicate of magnesia.

Maclurin, (mak'lū-rin). [Maclura, *q.v.*]= $C_{13}H_{10}O_6$ = Morintannic acid; found in fustic.

Macrauchenia, (mak-raw-kē'ni-a). [Gk. *makros*, long, *auchen*, neck.] Lama-like animals, belonging to Pachydermata, known only by fossil remains.

Macro, (mak'rō). [Gk. *makros*, long.]=Large: a prefix implying great size.

Macrocercus, (mak-rō-ser'kus). [Gk. *makros*, long; *kerkos*, tail.] = Macaw: an American parrot-like bird.

Macrocystis, (mak-rō-sis'tis). [Gk. *makros*, long, *kystis*, bladder.] Plants belonging to Fucaceæ: the stems are small, and the thread-like fronds are several hundred feet in length, and have large air-bladders at the ends.

Macrodactyli, (mak-rō-dak'ti-lī). [Gk. *makros*, long; *daktylos*, finger] A division of Grallatores, including the coot, rail, &c.; birds having long toes.

Macroglossa, (mak-rō-glos'sa). [Gk. *makros*, long; *glossa*, tongue.] 1 A bat, found in Java, having a long head and extensile tongue. 2. A hawk-moth, *v.* Sphingidæ. *M. titan* = Humming-bird hawk-moth: a moth greatly resembling the humming-bird.

Macropodidæ, (mak-ro-pod'i-dē). [Macropus, *q v.*] 1.=Kangaroos: a sub-division of Marsupialia. 2. Spider-crabs, sea-spiders, &c.: crustacean animals belonging to Decapoda.

Macropterna, (mak-rop-ter'na). [Gk. *macros*, long: *pterna*, heeled.] A frog-like animal, known only by fossil tracks. *v.* Lithichnozoa.

Macropus, (mak'ro-pus). [Gk. *makros*, long; *pous*, foot.]=Kangaroo: an Australian herbivorous animal belonging to Marsupialia, *q.v.*

Macrorhynus, (makrō-rī'nus). [Gk. *makros*, long; *rin*, nose] = Sea-lion, elephant, seal, &c.: a sub-division of Phocidæ.

Macrorhynchus, (mak-ro-rink'us). [Gk. *makros*, long; *rhygkos*, snout.] A crocodile-like animal, known only by fossil remains.

Macroscelides, (mak-rō-sel'i-dēz). [Gk. *makros*, long] African jumping-shrew = Elephant shrew: an animal belonging to Insectivora. *v.* Shrew.

Macroural, (mak-rū'ral) [Macrura, *q.v.*]= Shrimp-like: having a long tail.

Macrotherium, (mak-rō-thē'ri-um). [Gk. *makros*, long; *therion*, beast] A large animal, belonging to Edentata, known only by a few fossil remains, found in Miocene rocks.

Macrura, (mak-rū'ra). [Gk. *makros*, long; *oura*, tail.] Lobster, shrimp, &c.: decapod crustaceans with long tails.

Macula lutea, (mak'u-la lū'te-a). [L. *macula*, spot; *luteus*, yellow.]=Yellow-spot: a small depression at the centre of the back of the eye.

Maculæ, (mak'ū-lē). [L. *macula*, spot.] Spots: especially dark spots on the sun, &c. *cf.* Faculæ.

Madder, (mad'der). [*Maddere*, the A.-S. name] 1 =Rubia tinctoria: a plant belonging to Galiaceæ. 2. A red colouring matter, obtained from Rubia, used as a dye. *M.-wort*=Asperugo. *M.-worts*=Galiaceæ.

Madrepora, (mad-re-pō'ra). [*Madrepore*, the French name.] A coral polyp budding into a tree-like form.

Madreporic, (mad-re-pō'rik). [Madrepore, *q v.*] Resembling, or related to, Madrepora. *M. plate:* a rounded calcareous mass on the dorsal surface of a star-fish. *M. canals:* connecting the ambulacral system of star-fishes with the openings in the surface.

Madreporidæ, (mad-rē-pō'ri-dē). [Madrepora, *q v.*, Gk. *eidos*, form.] A sub-division of Coral-polyps or Anthozoa.

Mad-wort=Asperugo, *q.v.*

Mænura, (mē-nū'ra)=Lyre-bird: a pheasant-like bird, having very large tail feathers resembling a lyre in form.

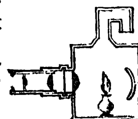
Mæstricht beds, (mā'strikt). [M. in Holland.] Calcareous strata, belonging to the Upper Cretaceous system, in which are found remains of Mosasaurus.

Magdeburg hemispheres. Two hollow hemispheres, usually of brass, which are kept together by the external pressure of the air, when the air within is pumped out: used to illustrate the pressure of the air.

Magellanic clouds, (mag-el-lan'ik). [Senor Magalhæns.] Oval nebulous patches in the southern heavens = Nubecula major and minor: resolvable by the telescope into a vast number of faint stars.

Magenta, (ma-jen'ta). [M. in Italy.] $C_{20}H_{19}N_3H_2O$. a rose-coloured dye obtained from aniline.

Magic lantern. A closed box containing a light which passes out at one opening only, and forms, when converged by a lens, on a screen in front, an image of any transparent picture placed before the opening.



Magic Lantern.

Magistery of Bismuth, (maj'is-ter-i). [Magistral, *q.v.*]=Subnitrate of Bi.

Magistral, (maj'is-tral). [L. *magister*, master] A compound of copper pyrites, sulphate of iron, &c., used in amalgamation, to assist the process.

Magnesia, (mag-nē'si-a). [Magnesia, where first found.]=MgO=Oxide of Magnesium: a white alkaline powder: one of the alkaline earths. *M. group of minerals:* includes Brucite, magnesia, &c. *Borate of M.*=Boracite. *Carbonate of M.*=Magnesite. *Chloride of M.*=Wagnerite. *Fluosilicate of M.*=Chondrodite. *Hydrate of M.*=Brucite. *M. alum*=Pickeringite.

Magnesian metals, (mag-nē'si-an). [Magnesia, *q.v.*] Dyad metals, which burn readily when much heated. *M. limestone*=Dolomite = Permian, *q.v.* *M. pharmacolite*=Berzeliite.

Magnesite, (mag-nē'sīt). [Magnesia, *q.v.*]= Native carbonate of magnesia: an amorphous mineral substance.

Magnesium, (mag-nē'si-um). [Magnesia, *q v.*] =Mg'': the type of the magnesian metals: a white malleable metal, which burns with dazzling brightness.

Magnet, (mag'net). A piece of steel or soft iron, which has the property of attracting iron, probably by the polarization of its particles. *Electro-M :* a piece of soft iron, magnetised by a current of electricity being sent through a wire coiled round it. *Natural M* =Loadstone

Magnetic, (mag-net'ik). [Magnet, *q.v.*] *M. pyrites:* iron pyrites having magnetic properties. *M. battery:* a number of magnets combined to act as one. *M. elements:* intensity, declination, and dip, *q.v.* *M. induction:* the magnetization of a piece of soft iron by holding near it a strong magnet. *M. electricity:* electricity generated by the presence of a magnet. *M. poles of the earth :* the two points toward which magnets point when free to move. In 1657 these coincided with the geographical poles. *M. fluid·* the hypothetical fluid supposed to be present in magnetised bodies. *M. inclination*=Dip. the angle which a magnet makes with the horizon when free to move in the vertical plane, coinciding with the magnetic meridian. *M. intensity:* the force with which a magnet is attracted by the earth *M. declination*=M. variation: the angle between the lines pointing from a given point to the geographical and magnetic poles of the earth. *M. oxide of iron*=Black oxide = Loadstone=Fe_3O_4. *M. equator*= Aclinic line, *q.v*, on which dip=O. *M. meridian, v.* Meridian.

Magnetism, (mag'ne-tizm). [Magnet, *q v.*] The attraction of iron by magnets, a form of insensible molecular motion: a variety of energy known to us only by its attractive or repellant power. *Red M.:* attraction by the N. pole of a magnet. *Blue M.:* attraction by the S. pole of a magnet. *Terrestial M.:* the magnetic attraction of the earth.

Magnetisation, (mag-net-i-zā'shun). [Magnet, *q.v.*] The conferring upon a piece of iron or steel the properties of a magnet. *M. of soft iron* by induction: either by placing near it a magnet, or passing a galvanic current through a wire twisted several times round it. *M. by the earth:* a piece of soft iron left for some time pointing to the magnetic pole becomes feebly magnetised.

Magnetite, (mag'ne-tīt). [Magnet, *q.v*]= Native lodestone: the mineral which has most magnetism: one of the iron group; chiefly oxide of iron, crystallising in cubes, and furnishing the finest quality of iron when smelted.

Magneto-electricity. Electricity derived from magnetism.

Magnetometer, (mag-net-om'e-ter). [Magnet and Meter, *q.v.*] An apparatus for the detection of magnetism, and for the measurement of its intensity.

Magnitude of stars—

6th mag., just visible to the unassisted eye.
*5th ,, twice as bright
4th ,, 6 times as bright
3rd ,, 12 times as bright } as the 6th.
2nd ,, 25 times as bright
1st ,, 100 times as bright

Magnol's arrangement of plants. The first division into families: made in 1689.

Magnolia, (mag-nō'li-a). [M. Magnol] A plant the type of Magnoliaceæ. *M. auriculata*=Indian physic. *M. cordata*=Heart-leaved cucumber tree. *M. glauca*=Swamp M. *M. grandiflora*=Laurel bay.

Magnoliaceæ, (mag-nō-li-ā'se-ē). [Magnolia, *q v*]=Magnoliads: shrubs and large trees, with fragrant flowers, belonging to Ranales.

Magpie, (mag'pī). [Mag. for Margaret; Pica, *q v.*]=Pica: a crow-like bird which may be taught to speak.


Magpie.

Magyar, (mad'yar). [The Hungarian name.] A European people=Hungarians.

Mahonia, (ma-hō'ni-a). [Mr. M'Mahon, of N. America.] = Ash-barberry = Berberis fascicularis: a tree belonging to Berberidaceæ.

Mahogany, (ma-hog'a-ni). [The S. American name]=Timber of Swietenia mahogoni: a large tree belonging to Cedrelaceæ, the wood of which is very hard and handsome.

Maia, (ma'ya). A crab-like animal, the type of Maiadæ; a family of Crustaceans.

Maid, (mād). A fish, somewhat resembling the skate, belonging to Raidæ.

Maiden-hair. *M. fern*=Adiantum: a plant belonging to Filices. *M grass*=Briza media.

Maize, (māz). [*Mahiz*, the Haytian name]= Indian Corn=Zea mays: a very prolific grass-like plant; the chief corn food of tropical America.


Maize.

Majolica, (ma-jol'i-ka). [Majorca.] A soft enamelled variety of earthenware, first made in Majorca.

Makis, (mā'kis) = Fox-nosed monkey: an animal belonging to Lemuridæ.

Malachite, (mal'a-kīt). [Gk. *malache*, mallow.]=Hydrated or green carbonate of copper: a beautiful mineral of the copper group, with oblique crystallization, much used for ornament: named from resembling the mallow in colour. *Blue M.*=Azurite. *Green M* =Malachite. *Lime M.:* a silky, green, hydrated carbonate of copper alloyed with iron and lime.

Malacolite, (mal-ak'ō-līt). [Gk. *malakos*, soft; *lithos*, stone.]=Sahlite, *q.v.*: a variety of pyroxene.

Malacology, (mal-a-kol'ō-ji). [Gk. *malakos*, soft; *logos*, discourse.] The science of molluscous or soft-bodied animals. *v.* Mollusca.

Malacopterygian, (mal-a-kop-tėr-ij'i-an) [Gk. *malakos*, soft, *pteryx*, fin.] Soft-finned *M. fishes*: carp, pike, salmon, cod, sole, &c.: a sub-division of Bony Fishes, of which the fin rays are generally soft.

Malacopteri, (mal'a-kop'tėr-i) = Malacopterygian fishes, *q.v.*

Malacostraca, (mal-a-kos'tra-ka). [Gk. *malakos*, soft; *ostrakon*, shell.] = 1. Higher Crustacea: as distinguished from the hard-shelled mollusca. 2. Burmeister's term for Podophthalma and Edriophthalma.

Malacozoaria, (mal-a-kō-zō-ā'ri-a). [Gk. *malakos*, soft; *zoon*, animal.] = Mollusca. soft-bodied animals.

Malacotomy, (mal-a-kot'ō-mi). [Gk. *malakos*, soft, *tome*, section.] = Anatomy of Molluscs. *v.* Zootomy.

Malæic acid, (ma-lē'ik). [Malic, *q.v.*] = $C_4H_4O_4$: a crystalline, colourless substance obtained from Malic acid = Succinic acid—hydrogen.

Malaleuca, (mal-a-lū'ka). A plant belonging to Myrtaceæ. *M. kayuputch* yields kayuputch oil.

Malamic acid, (mal'a-mic). [Malic, *q.v.*] = $C_4H_7NO_4$ = An amide of malic acid.

Malamide, (mal'a-mid). [Malic and Amide, *q.v.*] An amide of malic acid.

Malar bones, (mā'lar). [L. *mala*, cheek.] Cheek-bones: two triangular bones below the eyes. *M. prominence* = Cheek-bone.

Malates, (mal'āts). [Malic, *q.v.*] Compounds of malic acid with bases.

Malaxis, (mal-aks'is). [Gk *malaxis*, delicate.] An herb, with small green flowers, belonging to Orchidaceæ.

Malay, (mā'lā). An Oceanic people. *v.* Turanian. *M. bear* = Helarctos Malayanus.

Malbrouck = Cercopithecus, *q.v.*

Maldonite, (mal'don-it). An alloy of bismuth and gold.

Male, (māl). [The French word.] *M. fern* = Nephrodium filix-mas. *v.* Fern. *M. fluellin* = Linaria spuria. *v.* Fluellin.

Maleic acid = Malæic acid, *q.v.*

Malentozoaria, (mal-en-tō-zō-ā'ri-a). De Blainville's term for Cirripedia and Chiton.

Malesherbiaceæ, (mal-e-shėr-bi-ā'se-ē). [M. de Malesherbes.] = Crown-worts: shrubs and herbs belonging to Violales.

Malic acid, (mā'lik). [L. *malum*, apple.] = $C_4H_6O_5$: a crystalline substance found in vegetables, especially in apples and other fruits.

Malleable, (mal'ē-a-bl). [L. *malleus*, hammer.] Easily flattened out by hammering.

Malleability, (mal-ē-a-bil'i-ti). [Malleable, *q.v.*] The property of cohesion in metals and other substances, which allows them to be beaten or rolled into leaves. *cf.* Ductility.

Malleolus, (mal'lē-o-lus). [L. *malleolus*, small hammer.] A small projection of the shin bone, forming part of the ankle.

Malleus, (mal'lē-us). [L. *malleus*, hammer.] = Hammer bone: a small bone in the tympanic cavity of the ear in contact with the tympanum. In man the M. is small; in the Echidna it is large: in the Sauropsida it is very large, and divided into the os quadratum and os articulare: in bony fishes it is divided into these two and a third part, the meta-pterygoid.

Mallophaga, (mal-of'a ga). [Gk. *mallos*, fleece; *phago*, I eat.] Bird-lice, &c: wingless insects, parasitic, mostly upon birds.

Mallow, (mal'lō). [*Malva*, the Latin name.] = Malva, *q.v.* *Tree M* = Lavatera, *q.v.*

Mallow-worts, (mal'lō-wurts). [Mallow and Wort, *q.v.*] = Malvaceæ = Malvads.

Malonates, (mal'ō-nāts) [Malonic, *q.v.*] Compounds of malonic acid with bases.

Malonic acid, (mal'ō-nik) [Malic, *q.v.*] $C_3H_4O_4$ an acid substance obtained by adding oxygen to malic acid = Acetic and carbonic acids.

Malpighia, (mal-pig'i-a). [Signor Malpighi.] A plant, the type of Malpighiaceæ. *M. punicifolia* = Barbadoes cherry.

Malpighiaceæ, (mal-pig-i-ā'se-ē). [Malpighia, *q.v.*] = Malpighiads: trees and shrubs, chiefly tropical, belonging to Sapindales.

Malpighian capsules, (mal-pig'i-an) [Signor Malpighi.] Small cells, terminating the tubes of the kidneys, into which the renal arteries enter. *v.* Ferrein.

Malt, (mawlt). [The A.-S. word.] Corn, usually barley, artificially germinated to a partial extent, and then killed by heat, so that the sugar obtained from the starch remains unaltered.

Malt sugar = $C_6H_{12}O_6$. *v.* Sugar.

Maltha, (mal'tha) [The Latin name.] = Mineral tar: a white, waxy, brittle, viscid variety of bitumen, *q.v.* = Pittasphalt.

Malva, (mal'va). [The Latin name.] = Mallow: an herb, belonging to Malvaceæ.

Malvaceæ, (mal-vā'se-ē). [Malva, *q.v.*] = Mallow-worts: shrubs and trees, with showy axillary flowers, belonging to Malvales.

Malvales, (mal-vā'lēz) [Malva, *q.v.*] Plants, forming a division of Hypogynous exogens, of which Malvaceæ are the type.

Mamelucos Descendants of Europeans and W. Indians.

Mammalia, (mam-mā'li-a). [L. *mamma*, teat.] A primary division of Vertebrate animals (including all the highest class of animals) who suckle their young by means of mammæ, have hot blood with red corpuscles, and have each ramus of the mandible composed of a single piece of bone. Fossil remains of M. are not found in rocks older than Tertiary, excepting a few in Oolite and Trias rocks. Mammalian animals are divided into Placentalia, *q.v.*, having a placenta; and Implacentalia, *q.v.*, having no placenta.

Mammalogy, (mam-mal'ō-ji). [Mammalia, *q.v.*, Gk. *logos*, discourse.] The science of Mammalian animals.

Mammary glands, (mam'ma-ri). [L. *mamma*, teat.] Modifications of the sebaceous glands, by which milk is secreted for the nourishment of the young of mammalia.

Mammifera, (mam-mif'ėr-a). [L. *mamma*, teat; *fero*, I bear.] De Blainville's term for Mammalia.

Mammillary, (mam-mil'lar-i). [L. *mamma*, teat.] *M. minerals*: occurring in rounded forms like mammæ. *M. process* = Meta-

pophysis: a rounded projection of the last dorsal vertebra.

Mammoth, (mam'moth). [*Mamout*, the Russian name.]=Elephas primigenius: known only by fossil remains, found in post-pliocene rocks. *M. cave:* in Kentucky. *M tree.* a Californian tree, from 250 to 400 ft. high, and 15 to 30 ft. in diameter.

Man, (man). [The A.-S. name.]=Homo, *q.v.*: the highest known animal. *v.* Primates. *Families of M.: Semi-fossil M.*=*M. Engis*, *M. Engihoul*, *M. Neanderthal:* named after the places where the remains were found. *M. root* = Ipomea leptophylla: a plant, of which the esculent root is about the size and shape of a human body.

Man-of war hawk=Trachypetes aquila.

Manakins, (man'a-kinz)=Pipra: small birds, also called Chatterers, named from their small size. The males are brilliantly coloured, the females are dull green, they build open nests.

Manatee, (man'a-tē). [L *manus*, hand.]=Trichecus manatus: an herbivorous cetacean animal; also called Sea-cow.


Manatee.

Manatidæ, (man-at'i-dē). [Manatee, *q.v.*] Cetacean animals, including the Manatee, Dugong, &c., forming a division of Cetaceæ.

Manatus=Sea-cow=Manatee, *q.v.*

Manchineel tree, (man'chi-nēl)=Hippomane mancanilla: a large tree belonging to Euphorbiaceæ. It resembles the apple tree, and is very poisonous.

Mandangoes. An African people.

Mandarin, (man'da-rin). *M. duck* = Aix galericulata. *M. orange*=Citrus nobilis.

Mandelic acid=$C_8H_8O_3$=Formobenzoic acid =Phenylglycollic acid, *q.v.*

Mandibles, (man'di-blz). [L. *mandibulum*, jaw.]=Jaws, *q.v.* In Vertebrata, the lower jaw only, in birds, the rostra of the beak *Upper M.*, formed by two maxillary bones.

Mandibulata, (man-di-bū-lā'ta). Mandibles, *q.v.*]=Chewing insects: a primary division of insects, including biting and licking insects, as distinct from sucking insects. *v.* Insects.

Mandioca, (man-di-ō'ka). [Manihot, *q v.*]= Jatropha manihot, *q.v.*

Mandragora, (man-drag'ō-ra). [*Mandragoras*, the Greek name.]=Mandrake, &c.: a poisonous plant, belonging to Solanaceæ=Atropa mandragora; also called Devil's-apple.

Mandrake, (man'drak). [Mandragora, *q.v*]= Mandragora officinalis=Atropa mandragora. *v.* Atropa.

Mandrill, (man'dril). [*Mandrille*, the French name.]=Simia maimon=Cynocephalus maimon: a monkey of the baboon kind.

Mane, (mān). [*Mōn*, the Icelandic name.] Long neck-hair, common with the horse, lion, &c.

Manganates, (mang'ga-nāts). [Manganic, *q.v.*] Compounds of manganic acid with bases.

Manganese, (mang'ga-nēz). [L. *magnes*, magnet.]=Mn: one of the *iron-like metals*; a grey, brittle, feebly-magnetic substance; also called Manganesium *M. blende* = Native sulphide of manganese. *M. group of minerals:* includes pyrolusite, psilomelane, manganite, wad, diallogite, and rhodonite. *M. spar*=$MnCO_3$: native carbonate of manganese=Diallogite=Red M

Manganic acid, (man-gan'ik) [Manganese, *q.v.*]=H_2MnO_4: an acid substance, hydrated oxide of manganese, which is not known as a separate substance.

Manganite, (mang'ga-nīt) [Manganese, *q.v.*] =$H_2Mn_2O_4$=Grey oxide of manganese: a metallic mineral, crystallising in rhombs, resembling pyrolusite.

Manganjas. An African people.

Mangel-wurzel, (mang'el-wur-zel) [*Mangold-wurzel*, the German name]= Red-beet: a plant resembling the beet, the root of which is much used as food for cattle, belongs to Chenopodiaceæ

Mangifera, (man-jif'er-a). [Mango, *q v.*; L. *fero*, I bear.] A resinous tree, belonging to Anacardiaceæ, having an edible fruit. *M. Indica*=Mango tree. of tropical Asia and West Indies.

Mango, (mang'o) [*Mangga*, the native name.] 1. The fruit of Mangifera Indica. 2. A fish =Polynemus risua.

Mangold-wurzel. *v* Mangel-wurzel.

Mangosteen, (mang'ō-stēn). The edible fruit of Garcinia mangostana, a New Zealand tree.

Mangrove, (mang'grov) [Corr. of Malay name.]= Rhizophora gymnorhiza: a large tropical tree, from the branches of which roots descend to the ground; it has green leaves, brown flowers, and bean-like seeds; the timber is heavy and durable.

Mangroves, (mang'grōvz). [Mangrove, *q v.*]= Rhizophoraceæ, *q v.*

Mangusta, (mang-gōs'ta) [*Mangousta*, the French name.]=Indian ichneumon: an animal belonging to Herpestes, *q v.*

Manihot, (man'i-hot). [The Brazilian name.] =Mandioc= Janiphax manihot = Jatropha manihot: a plant belonging to Euphorbiaceæ, from which tapioca is obtained.

Manilla, (man-il'la). [Manilla, Id] *M. hemp:* a coarse fibre obtained from the plant Musa textilis.

Manioc=Manihot, *q v.*

Manis, (mā'nis) = Pangolin: an animal belonging to Edentata.

Manna, (man'na) [The Latin name.] A sugary gum from Larch, Fraxinus, Eucalyptus, and other trees. *M. ash*=Ornus rotundifolia. *M. Sinai:* wholly of sugar, from Tamarix. *M. grass*=Glyceria, *q.v.*

Mannides, (man'nīdz). [Mannite, *q.v.*] Artificial compounds of mannite with acids, resembling natural fats.

Mannite, (man'nīt). [Manna, *q v.*]=$C_6H_{14}O_6$: the sweet principle of manna, differing from sugar in not fermenting with yeast and water = Mannitane and water = Inverted sugar and hydrogen.

Mannitane, (man'i-tān). [Mannite, *q.v.*]=

$C_6H_{12}O_5$ a syrup substance obtained from mannite.

Mannitose, (man′i-tōs). [Mannite, *q.v.*] A fermentable variety of sugar obtained from mannite.

Manometer, (man-om′e-ter). [Gk. *manos*, rare; *metron*, measure.]=Pressure gauge: an instrument for measuring the pressure or tension of gases.

Mansard, (man′sard). [M. Mansardo] *M. roof*=Curb-roof. formed by two sets of rafters, one enclosing the other.

Mantides, (man′ti-dēz). [Mantis, the typical genus; Gk. *eidos*, form.] Insects belonging to Orthoptera.

Mantissa, (man-tis′sa). [L. *mantissa*, increase.] The fractional part of a logarithm.

Mantle, (man′tl). [*Mantellum*, the Latin word.]=Pallium: an integument enclosing the viscera of mollusca, and forming a kind of cloak within the shell. *M. lobes:* in Lamellibranchiata open right and left; in Brachiopoda open back and front.

Manubrium, (man-ū′bri-um). [L. *manubrium*, handle] 1. The central, dependant, polypite of hydrozoa: serves as a gastric or genital sac. 2. The upper and rounded extremity of the breast-bone.

Manures, (ma-nūrz′). [F. *manœuvrer*, to work with the hand.] Substances added to land to increase its fertility, such as bones, guano, phosphates, sewage, sea-weeds, &c.

Manus, (man′us). [The Latin word.]=Hand, *q.v.*

Manx, (manks). Connected with the Isle of Man. *M. cat:* a tail-less variety of the common cat found in the Isle of Man.

Maori, (mā′o-ri). The aborigines of New Zealand.

Map, (map). [L. *mappa*, table-cloth.] A plan of a portion or the whole of the surface of the earth. *Central projection*=Gnomonic projection, *q v.* *Globular projection:* when the eye is supposed to be about $\frac{2}{3}$ of the radius distant. *Gnomonic projection:* when the eye is supposed to be at the centre of the earth. *Orthographic projection:* when the eye is supposed to be at an infinite distance. *Stereographic projection:* when the eye is supposed to be at the surface, *v.* Projection.

Maple, (mā′pl). [*Mapel*, the A.-S. name.] =Acer, *q.v.*: a tree belonging to Aceraceæ. *M. sugar:* from Acer saccharinum.


Maple.

Marantaceæ, (mar-an-tā′se-ē). [Signor Maranti.]=Marants: tropical herbaceous plants belonging to Amomales.

Marble, (mâr′bl). [*Marbre*, the French name.] A crystalline variety of limestone which is hard enough to be finely polished, often coloured by iron pyrites, &c. *Forest M.*=Bath Oolite, *v.* Oolite. *Green M.*=Serpentine, *q.v.* *Statuary M.* has no fossils, and is usually of a pure white colour.

Marcasite, (mâr′ka-sīt)=White iron pyrites: a mineral of the iron group, resembling pyrites, *q.v.*, in composition, but crystallising in rhombs.

Marcgraviaceæ, (mark-grā-vi-ā′se-ē). [Sir G. Marcgrave.]=Marcgraviads: trees and shrubs, sometimes climbing, with numerous seeds, belonging to Guttiferales.

Marchantiaceæ, (mar-shan-ti-ā′se-ē). [M. Marchant]=Liver-worts: small cellular leafless plants, found in damp places, belonging to Muscales.

Mare, (1, mār; 2, mā′rē). [1. *Mere*, the A.-S. word; 2. The Latin word.] 1. The female of a horse, *q.v.* 2 Dry, flat hollows or plains in the moon are called mares, and named separately, as Mare Crisium, Mare Serenitatis. *v.* Moon.

Mare's tail=Equisetum, *q.v.*

Margarates, (mâr′ga-rāts). [Margaric, *q.v.*] Compounds of margaric acid with bases.

Margaric acid, (mâr-gar′ik). [Gk. *margarites*, pearl]=$C_{17}H_{34}O_2$: a crystalline fatty acid, named from its pearly lustre.

Margarin, (mâr′ga-rin). [Gk. *margaron*, pearl.] =$C_{54}H_{104}O_6$: a compound crystalline substance found in fat, olive oil, &c.

Margarite, (mâr′ga-rīt). [Gk. *margarites*, pearl.] A mineral, a variety of mica, also called pearl-mica.

Marie Davy battery. A galvanic battery consisting of plates of zinc in brine, and of carbon in bisulphate of mercury.

Marigold, (mar′i-gōld). [Mary and Gold.]= Calendula: an herb belonging to Asteraceæ. *Marsh M.*=Caltha palustris.

Marine, (ma-rēn′). [*Marinus*, the Latin word.] Belonging to the sea. *M. glue:* shell-lac and india-rubber dissolved in mineral naphtha. *M. snakes*, *v.* Ophidia.

Mariner's compass. A declination compass, and fittings necessary to adopt it for the purpose of directing a ship's course.

Mariotte's (ma-ri-ot′). [M. Mariotte.] *M. bottle:* with openings at the side, to illustrate the laws of water issuing in the form of a jet. *M. law*=Boyle's law: that the volume of a gas varies inversely as the pressure to which it is subjected.

Marishes=Marshes, *q.v.*

Marjoram, (mâr′jō-ram). [*Marjorana*, the Latin name.]=Origanum: an herb belonging to Lamiaceæ.

Markab, (mâr′kab). A star of first magnitude. *v.* Sun stars.

Marl, (mârl). [The Welsh name.]=Clay and Lime=Calcareous clay; also used generally for any earth that crumbles on exposure to air. *M. slate:* a sub-division of Middle Permian: a calcareous shale.

Marlborough wheel. A wheel connected with two other wheels, so that it turns each of them.

Marmalade, (mâr′ma-lād). [*Marmelade*, the French word.] Orange preserved with sugar.

Marmoset, (mâr′mō-zet). [*Marmouset*, the

French word.]=Hapale penicillata: a small monkey, resembling the squirrel, peculiar to tropical America.

Marmot, (mär'mot). [*Marmotte,* the French name.] = Arctomys: an animal belonging to Rodentia.


Marmot.

Marois. An Oceanic race.

Marquetry, (mär'ket-ri). [*Marqueterie,* the French word.] The ornamental arrangement of a number of small pieces of wood. cf. Parquetry.

Marquoi's rulers, (mär'kwaw). [M. Marquoi.] For drawing a number of parallel lines, and also others perpendicular to these.

Marram grass=Psamma arenaria=Arundo arenaria: a plant belonging to Gramnaceæ; also called sea-reed.

Marrow, (mar'rō). [*Mearg,* the A.-S. name.] =Medulla: a fatty substance found in large bones.

Marrubium, (mar-rō'bi-um). [Heb. *marrob,* bitter juice.]=White horehound: an herb belonging to Lamiaceæ.

Mars, (märs.) [Classical.] The planet next beyond the earth, 140 millions of miles from the sun: its diameter is 4363 miles, and length of year 687 days; presents sometimes a full and sometimes a gibbous appearance, like the moon; and shines with a ruddy light, whence it is named after the god of war.

Marsh, (mär sh). [*Merse,* the A.-S. word.] *M. cinquefoil* = Comarum palustre=Potentilla comarum: an herb belonging to Rosaceæ. *M. marigold* = Caltha palustris, *q.v.* *M mallow*=Althæa officinalis, *q.v.*; also called Hibiscus. *M. otter*=Mustela vison. *M. samphire*=Salicornia herbaceæ. *M. warbler* =Salicaria palustris.; *v.* Warbler.

Marsh gas = CH_4 = Carburetted hydrogen (Light), *q v.*=Methyl hydride. *M. series*= C_nH_{2n+2}: includes the hydrides of Methyl, Ethyl, Propyl, Butyl, &c., hydrogen being the hypothetical first term. *M. type*= CH_4.

Marsh's test for arsenic. By the combination of hydrogen with arsenic if it be present.

Marsileaceæ, (mär-sil-ē-ā'se-ē). [Count Marsigli of Italy.]=Pepper-worts: stemless, flowerless plants, found in ditches; belonging to Lycopodales.

Marsipobranchii, (mär-si-pō-brang'ki-i). [Gk. *marsipos,* pouch: *bragchia,* gill.]=Lampreys, hag fishes: fishes with pouch-like gills; a primary division of fishes.

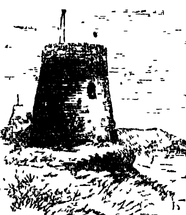
Marsupial bones, (mär-sū'pi-al). [Marsupium, *q.v.*] Ossifications or chondrifications of the internal tendon of the external muscle of the abdomen.

Marsupialia, (mär-sū-pi-ā'li-a). [Marsupium, *q.v.*]=Didelphia: vertebrate animals, mostly Australian, the young of which is kept for a time after birth in an abdominal pouch; a primary division of Mammalia, connecting mammals with birds.

Marsupium, (mar-sū'pi-um). [L. *marsupium,* pouch] 1. A fold of the skin of the abdomen above the pelvis. 2. A membrane in the eye.

Martagon, (mär'ta-gon). [The French name.] *Purple Lily*=Lilium M.; also called Turk's cap.: a plant belonging to Liliaceæ.

Martello tower, (mar-tel'lō). [Mortello in Corsica.] A small round fort, usually for defence of the coast.


Martello-tower.

Marten, (mär'ten). [*Martre,* the French name.] = Mustela martes: a weasel-like animal.

Martial. Belonging to the planet Mars.

Martin, (mar'tin). [*Martinet,* the French name.] = Hirundo urbica: a swallow-like bird; also called Chelidon urbica. *Fairy M.*=Hirundo ariel: an Australian bird *Sand M.* = Cotyle riparia.


Martin.

Martinet, (mär'ti-net) [The French name.] A swallow-like bird, also called Griffon.

Martius's classification of plants, made in 1835 by Professor M of Munich.—

Primitive vegetation—

Ananthis=Flowerless plants.
Loxines=Monocotyledons
Tympanochetes=Gymnogens
Orthoines=Dicotyledons.

Secondary vegetation—

Fungals.

Masked. *M. grosbeaks*=Eophona personata. *M. monkey*=Callithrix personata.

Mason wasp: *v.* Wasps.

Masonry, (mā'son-ri)=Stone-work: walls, &c., composed of stone.

Mason's hygrometer=Wet bulb hygrometer: two thermometers on one stand, one of which has its bulb kept wet. The difference between the two shows the amount of moisture in the air.

Masseter muscle, (mas'e-ter). [Gk. *maseter,* a chewer.] In the face: from the malar bone to the lower jaw.

Massey's sounding machine. A brass shield, with vanes, which revolve as they descend, and register the distance travelled by means of indices resembling those of a gas meter.

Massicot, (mas'si-cot). [The French word.] Yellow oxide of lead, used as a pigment.

Massilia. No. 20 of the Minor Planets, *q.v.*

Massive type of animals. Von Baer's term for Mollusca.

Mast, (mast). [The A.-S. word.] The fruit of the oak or beech.

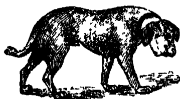
Mast-worts, (mast). [Mast, *q.v.*]=Corylaceæ, *q.v.*

Master-wort=Imperatoria: a plant belonging to Apiaceæ, now called Peucedanum ostruthium.

Mastic, (mas'tik). [*Mastiche*, the Latin name.] A resin, used as a varnish, obtained from the plant Pistachia lentiscus.

Mastication, (mas-ti-kā'shun). [L. *Masticare.*] =Chewing: the grinding of solid food preparatory to its passing into the stomach.

Masticatory organs, (mas-ti-kā'to-ri). [Mastication, *q.v.*] In Invertebrate animals, either hardened mucous membrane or modified limbs; in Vertebrate animals, modifications of cephalic parieties always distinct from limbs.


Mastiff

Mastiff, (mas'tif). A variety of the dog remarkable for its strength and courage.

Mastodon, (mas'tō-don). [Gk. *mastos*, breast, *odous*, tooth.] An extinct elephant-like mammal of America, whose teeth have a nipple-like surface.


Mastodon

Mastodonsaurus. *v.* Labyrinthodon.

Mastoid processes, (mas'-toid). [Gk. *mastos*, breast; *eidos*, form.] Two rounded projections at the back of the lower part of the skull.

Mat-grass=Mat-weed=Nardus: a grass-like plant.

Matchan, (match'an). [The native name.] *M. atem*=Black tiger of New Zealand. *M. loreng*=Striped tiger of New Zealand. *M. tortoel*=Leopard of New Zealand.

Mater, (mā'ter). [Gk. *mater*, mother.] *Pia-mater:* a soft, thin membrane enclosing the brain. *Dura-mater:* a dense membrane enclosing the brain.

Mathematics, (math-ē-mat'iks). [Gk. *mathematike*, science.] The science of quantitive relation, includes arithmetic, algebra, trigonometry, &c.

Matrass, (mat'ras). [*Matras*, the French word.] 1. A globe of thin glass, having a long neck, used in Chemistry. 2. Any ignition tube.

Matricaria, (mat-ri-kā'ri-a). [L. *matrix*, womb.] A plant belonging to Asteraceæ. *M. chamomilla*=Wild chamomile. *M. parthenium*=Fever-few.

Matrix, (mā'triks). [The Latin word.]= Womb: used generally for anything which encloses a substance and gives form to it.

Matt, (matt). [Gk. *matt*, dull.] In smelting, especially in lead-working: used for imperfectly refined metals.

Matter, (mat'ter). [*Materia*, the Latin word.] A general term for any substance; for anything which has extension.

Matthiessen's differential thermometer. [Doctor Matthiessen.] Adapted to the measurement of the temperatures of two liquids.

Matthiola, (mat-ti'ō-la). [Signor Matthiolus.] =Stock: an herb belonging to Brassicaceæ. *M. incana*=Gillyflower.

Mauritius, (maw-rish'i-us). [Prince Maurice.] *M. grass:* a large kind of couch grass found in Ceylon. *M. weed:* Rocella fusi-formis.

Mauve, (mōv). [The French word.] A violet dye-stuff obtained from analine. *v.* Aniline dyes.

Mauveine, (mōv'in). [Mauve, *q.v.*] The base of Mauve, *q.v.*

Mavis, (mā'vis). [*Mauvis*, the French name.] =Turdus musicus: a thrush-like bird; also called Throstle.


Mavis.

Maxilla, (maks-il'la). [L. *mala*, jaw.] 1. In Vertebrata: the same as the superior maxilla of man. 2. In Arthropoda: limbs modified as jaws.

Maxillary, (maks-il'lā-ri) [L. *mala*, jaw.] *M. bones of skull:* two bones forming the jaws; the upper is in two pieces, and extends upwards between the nose and eyes. *M. nerve: Upper M.* serves the nose, eyelids, teeth, and lip of upper jaw. *Lower M.* serves the tongue and lower jaw.

Maxillipedes, (maks-il'i-pēdz). [Maxilla, *q.v.*; L. *pes*, foot.]=Foot-jaws: modified limbs in Crustacea, which serve as jaws.

Mayaceæ, (mā-ā'se-ē)=Mayacs: moss-like plants with narrow leaves and small flowers.

May. *M. chafer*=Melolontha vulgaris. *M. apple* of N. Mexico=Podophyllum peltatum. *M. pole*=American aloe=Agave Americana.

May flies=Ephemeræ: insects belonging to Neuroptera.

May-hill sandstone. [M. in Gloucestershire.] =Upper Llandovery rocks, connecting Upper and Lower Silurian strata.

Maximum thermometer. One adapted to the registration of the highest temperature reached in a given period.

M'Fans. An African people.

M'Leay's classification of animals:—

<table>
<tr><td colspan="2" align="center">VERTEBRATA.</td></tr>
<tr><td align="center">Cephalopoda.</td><td align="center">Annelida.</td></tr>
<tr><td>MOLLUSCA.</td><td align="right">ANNULOSA.</td></tr>
<tr><td align="center">Tunicata.</td><td align="center">Cirripeda.</td></tr>
<tr><td align="center">ACRITA.</td><td align="center">RADIATA.</td></tr>
<tr><td colspan="2" align="center">Zoanthida.</td></tr>
</table>

Vertebrata passes through Annelida to Annulosa, and through Cephalopoda to Mollusca. In the same way Radiata passes through Cirripeda to Annulosa, and through Zoanthida to Acrita, &c.

M'Pongos. An African people.

Meadow, (med'ō) [*Mæd*, the A.-S. word.] *M. fox-tail grass*=Alopecurus pratensis. *M. grass*=Poa trivialis. *M. rue*=Thalictrum flavum. *M. saffron*=Colchicum autumnale. *M. sweet*=Spiræa ulmaria.

Meandrina, (me-an-drī'na). [*Meandrine*, the French name] = Brain-coral a family of corals, with furrows, formed by long rows of mouths.

Mean sun. *v.* Sun.

Measles, (mē'zlz) [G. *Maser*, speck.] An eruptive fever-like disease.

Measurement, (mez'ūr-ment). [*Mesure*, the French word.] *M. of angles:* by degrees, each degree = $\frac{1}{90}$ of a right angle. *M. of area*, *v.* M. of space. *M. of force*, *v.* Momentum. *M. of length*, *v.* M. of space. *M. of light*=Photometry. *M. of space.* of length, by feet, miles, leagues, &c; of area, by square feet, acres, square miles, &c.; of volume, by cubic feet, &c. *M. of surface* = M. of area. *M. of time:* by seconds, minutes, hours, &c.

Measures. *Coal M:* the upper portion of the carboniferous strata, in which are found beds of coal; *v.* Primary strata. *French M.*, *v.* Metric system.

Meat, (mēt). [*Mete*, the A.-S. word] *Extract of M.* = Concentrated juice of meat *Lean of M.*=Muscle. *Hog's M.*=Roots of Boerhavia decumbens.

Meatus, (mē-ā'tūs). [The Latin word.] An opening, especially used for the opening of the ear.

Mecca, Balm of. Obtained from Balsamodendron myrrh.

Mechanical, (mē-kan'i-kal). [*Mechanicus*, the Latin word.] *M. equivalent of heat*= 1,390 foot-pounds per thermal unit. *M theory of heat*=Dynamical theory, *q v* *M. work of a man's body*= 1,430,000 foot-pounds, half being used internally in the work of circulation, respiration, &c., and the other half being available for external work. *M. powers:*—1. *The lever:* a movable rod with one point fixed. 2. *The wheel and axle.* a modification of the lever, *v.* Wheel. 3. *The inclined plane:* a gradual ascent. 4. *The Wedge:* a double inclined plane. 5. *The screw:* an inclined plane winding round an axis.

Mechanics, (mē-kan'iks). [*Mechanikos*, the Greek word.] The science of the laws of forces, as shown by matter in masses.

Meconates, (mek'ō-nāts). [Meconic, *q.v.*]= $M_3C_7HO_7$: compounds of meconic acid with a base.

Meconic acid. (me-kon'ik). [Gk. *mekon*, poppy.]=$C_7H_4O_7.3H_2O$: a crystalline poisonous substance found in opium.

Meconine, (mek'ō-nin). [Meconic *q v*]= $C_{10}H_{10}O_4$: a crystalline substance found in opium.

Meconopsis, (me-kō-nop'sis). [Gk. *mekon*, poppy, *opsis*, appearance.]=Welsh poppy: a plant belonging to Papaveraceæ.

Medeola. A gourd-like plant. *M. virginaca* =Indian cucumber.

Median, (mē'di-an). [L. *medius*, middle] *M. fins:* peculiar to fishes. *M. nerve:* in the arm, serving the fingers.

Medicago, (med-i-kā'go). [The Greek name.] =Medick: an herb belonging to Leguminaceæ. *M. disciformis*=Hedge-hogs.

Medical science. The knowledge of the action of medicines upon the animal system. Heteropathy=Allopathy: the use of medicines likely to counteract the given disease. Homœopathy: the use of medicines, usually in minute doses, likely to cause the given disease in a state of health.

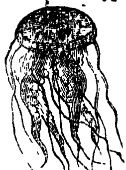
Medlar, (med'lar). [*Medle*, the A.-S. name] =Pyrus Germanica: a plant of the apple kind.

Medulla, (me-dul'la). [L. *medulla*, marrow.] 1 =Spinal cord. the centre of the nervous system in vertebrate animals. 2 =Marrow: a delicate variety of connective tissue. *M. oblongata:* the hindermost part of the brain, in contact with the spinal cord, from which most of the cerebral nerves originate.

Medullary, (me-dul'la-ri). [Medulla, *q v*] The middle portion of the kidney. *M. rays:* vertical plates of cellular tissue, which radiate from the pith of an exogenous plant to the bark.

Medusa, (me-dū'sa). [Classical] *Head of M.* =Algol, *q. v.*

Medusæ, (me-dū'sē). [Medusa, the typical genus] = Jelly-fishes= Discophoræ: a subdivision of Hydrozoa, gelatinous animals in which the heart and stomach are identical. *v.* Acalephæ. *Craspedote M* = Gymnophthalmata=Naked-eyed M.: mostly small, and phosphorescent. *M. with covered eyes:* have a membrane over the supposed eyes. *M. with naked eyes* have no such membrane


Medusæ.

Medusoid, (me-dū'soid). [Medusa, *q v.*, Gk. *eidos*, form.] Medusa-like. *Steganophthalmate M* =M. with covered eyes, now included in Lucernaridæ.

Meerschaum, (mēr'shawm). [Gk. *meer*, sea; *schaum*, foam] A soft, white, clayey mineral, chiefly hydrated silicate of magnesium: used for tobacco pipes, and, when fresh, also as a kind of soap.

Megaceros, (me-gas'e-ros). [Gk. *megas*, large; *keras*, horn.] *M. Hibernicus*=Irish elk: a large stag, known only by fossil remains.

Megaderma, (meg-a-der'ma). [Gk. *megas*, large, *derma*, skin.] *M. lyra*=Lyre bat.

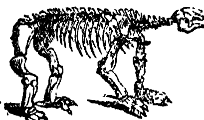
Megalodon, (me-gal'ō-don). [Gk. *megas*, large *odous*, tooth] A molluscous animal, known only by shells found in Devonian rocks.

Megalosaurus, (meg-a-lō-saw'rus), Gk. *megas*, great, *sauros*, lizard] A large carnivorous lizard, moving chiefly on its hind limbs, analogous in structure to the ostrich, known only by fossil remains in Lias, Oolite, and Wealden rocks.

Megaptera, (me-gap'ter-a). [Gk. *megas*, great; *pteryx*, fin.]=Hump-backed whale. a cetacean animal, named from its large fins.

Megatherium, (meg-a-thē'ri-um). [Gk. *megas*, great, *therion*, beast.] An extinct animal of large size, resembling the sloth in some characters, belonging to Edentata: known

only by fossil remains found in Pleistocene rocks of South America.


Megatherium.

Megohm, (meg'ōm) [Gk. *megas*, great; Professor Ohm] = One million ohms: a measure of electric resistance. *v.* Ohm.

Meibomian glands. (mī-bō'mi-an). In the eyelids.

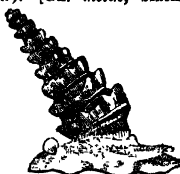
Meisner's classification of plants:—
Vascular plants—
Dicotyledons.
Diplochlamyds.
Thalamiflorals.
Calycifloi als.
Monocotyledons.
Cellular plants—
Acotyledons.

Melaconite, (mel-ak'ō-nīt). [Gk. *melas*, black; *konis*, powder.]=Black copper ore: one of the copper group of minerals, amorphous, chiefly oxide of copper=CuO.

Melam, (mel'am). [Gk *melas*, black.] A grey powder obtained from sulphocyanide of ammonium.

Melampyrum, (mel-am-pī'rum). [Gk. *melas*, black; *pyros*, wheat.]=Cow-wheat: an herb belonging to Scrophulariaceæ.

Melania, (mel-ā'ni-a). [Gk. *melas*, black.] A snail-like animal found in estuaries; also called black snail.


Melania

Melanite, (mel'-an-īt). [Gk. *melas*, black] A black variety of garnet.

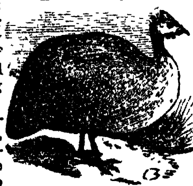
Melanthaceæ, mel-an-thā'se-ē). [Gk. *melas*, black, *anthos*, flower.] = Melanths: crocus-like plants, mostly poisonous, belonging to Liliales, named from the dark colour of the flowers.

Melaphyre, (mel'a-fīr). [Gk. *melas*, black.] A dark-coloured variety of basalt, belonging to the middle Trias period.

Melastomaceæ, (mel-as-tō-mā'se-ē). [Gk. *melas*, black; *stoma*, mouth]=Melastomads: herbs, shrubs, and trees, belonging to Myrtales.

Melde and Faraday's figures. Regular figures formed by the arrangement of fine sand spread over a vibrating surface.

Meleagris, (mel-ē-ā'-gris). [L. *meleagris*, guinea fowl.]=Turkey: a poultry-like bird belonging to Pavonidæ.


Meleagris.

Melene, (mel'ēn)=$C_{30}H_{60}$: a paraffin obtained from wax.

Meles, (mē'les). [The Latin name]=Badger: a nocturnal, omnivorous, burrowing animal belonging to Carnivora.

Melezitose, (mel'e-zi-tōs). [F. *meleze*, larch tree] A variety of sugar obtained from the larch tree.

Melia, (mel'i-a). [Gk. *melia*, ash tree.] A plant, the type of Meliaceæ. *M. azedarach* =White cedar of N. Zealand; also called Lilac.

Meliaceæ, (mel-i-ā'se-ē). [Melia, *q.v.*]= Meliads: trees and shrubs, with small flowers, belonging to Rutales.

Melilite, (mel'i-līt) [Gk. *meli*, honey; *lithos*, stone.] = Humboldtilite: a mineral, chiefly silicate of calcium and aluminum, named from its colour resembling that of honey.

Melilotus, (mel-i-lō'tus). [Gk. *meli*, honey: Lotus, *q.v.*]=Melilot: an herb belonging to Leguminaceæ.

Melinophane, (mel'in-ō-fān). [Gk *meli*, honey; *phaino*, I show.] A mineral which resembles leucophane.

Meliphagidæ, (mel-i-faj'i-dē). [Gk. *meli*, honey; *phago*, I eat.]=Honey-eaters: birds of great variety, belonging to Insessores, chiefly Australasian.

Melissa, (mel-is'sa). [Gk. *melissa*, bee]= Balm: an herb belonging to Lamiaceæ, named from bees frequenting it.

Melitose, (mel'i-tōs) = $C_{12}H_{22}O_{11}.3H_2O$: a variety of sugar, which requires hydration previous to fermentation.

Melittis, (mel'it-tis). [Gk. *melissa*, bee.]= Bastard-balm: an herb belonging to Lamiaceæ.

Mellifera, (mel-lif'er-a). [L. *mel*, honey; *fero*, I bear.]=Honey-bearers=Bees, *q.v*

Melliphagidæ, (mel-li-faj'i-dē). [Gk. *meli*, honey, *phago*, I eat.]=Honey-eaters: used for honey-eating birds generally, and especially for the bell-bird and wattle-bird of Australia.

Mellite, (mel'līt). [Gk. *meli*, honey; *lithos*, stone.]=Honey-stone: a rare mineral, chiefly mellitate of aluminum.

Mellitates, (mel'li-tāts). [Mellitic, *q.v.*] Compounds of mellitic acid with bases.

Mellitic acid, (mel-lit'ik). [Mellite, *q.v.*] $C_9H_6O_6$: an acid substance found in mellite; also called Benzol hexacarbonic acid. *Hemi-M.*=$C_9H_6O_6$: a modified form of M.

Mellivora, (mel-liv'ō-ra). [L. *mel*, honey: *voro*, I eat] = Honey-badgers = Ratels: animals resembling the badger, found in Africa.

Mellone, (mel'lon). C_9N_{13}: a radicle, known only in combination, obtained from compounds of cyanogen.

Mellonides, (mel'lō-nīdz). [Mellon, *q.v.*] Compounds of mellon with bases.

Melolontha, (mel-ō-lon'tha). [The Latin name.] *M. vulgaris*=Cockchafer, *q.v.*

Melon, (mel'on). [The French name.]=Cucumis melo: a plant belonging to Cucur-


Melon.

bitaceæ, the fruit of which is edible. *Essence of M.*, v Essence.

Melophagus, (mel-of'a-gus). [*Melophagos*, the Greek name.] An insect belonging to Hippoboscidæ, *q.v.* *M. ovinus*=Sheeplouse.

Melting. [*Meltan*, the A.-S. word.]=Fusion, *q v.*

Member, (mem'bẹr). [*Membrum*, the Latin name.] 1. Of an equation: all the terms on one side of the sign=. 2. Of an organised being=Limb, *q.v.*

Membracis, (mem-brā'sis). [The Latin name.] =Leaf-hopper: an insect belonging to Homoptera.

Membrane, (mem'brān). [*Membrana*, the Latin word.]=Skin: a thin layer of tissue serving as a covering.

Membranes, (mem'brānz). [Membrane, *q v.*] *M. of brain:* dura mater, arachnoid M., pia mater, and falx, *q.v.* *M. of Corti:* in the cochlea of the ear, separating it into chambers, and enclosing the scala media.

Membranous, (mem'brā-nus). [Membrane, *q.v.*] *M. labyrinth:* a part of the essential organ of the sense of hearing, an oval sac containing a fluid and otoliths, or small bones; probably able only to distinguish intensity of sound.

Menaccanite, (men-ak'a-nīt). [Menachan in Cornwall.] A variety of hæmatite: a black mineral, slightly magnetic; also called Ilmenite.

Menchecourt drift. [M. near Abbeville.] A Post-Pliocene bed in which was found an entire skeleton of a rhinoceros.

Mendipite, (men-di-pīt). [Mendip Hills.] A rare mineral, white and nearly opaque: chiefly chloride and oxide of lead.

Menevian beds, (men-ē'vi-an). [*M.*=Classical name of St. Davids.] The uppermost of the Lower Cambrian rocks: near St. Davids in N. Wales.

Mengite, (men'jīt). [Mr. Menge.] 1. A black mineral, chiefly zirconia, oxide of iron, and titanic acid; also called Ilmenite. 2.= Monazite, *q.v.*

Menhirs, (men'hẹrz). [Welsh *maen*, stone.]= Standing stones, mostly ancient tombs. *cf.* Dolmen.

Meniscus, (men-is'kus). [Gk. *meniskos*, little moon.] A crescent-shaped lens.


Meniscus.

Menispermaceæ, (men-is-pẹr-mā'se-ẹ). [Gk. *meniskos*, little moon; *sperma*, seed.] = Menispermads: tropical twining shrubs, with small narcotic flowers, belonging to Menispermales; the only order of Exogens which has ternary flowers throughout, approximating to Dictyogens. Named from the crescent-shaped seeds.

Menispermales, (men-is-pẹr-mā'lēz). [Menispermaceæ, *q.v.*] Plants with monodichlamydeous flowers and much albumen with the embryo, forming a division of Diclinous Exogens.

Menkar, (men'kar). [The Latin name.]=*a Ceti*: the chief star of the constellation Cetus; a sun star.

Menobranchus, (men-ō-brang'kus). [Gk. *menos*, strength; *brachion*, gill.] = North American eft: a batrachian, with permanent gills, belonging to Urodela, usually about two feet in length.

Menopoma, (men-o-pō'ma). [Gk. *menos*, strength; *poma*, gill cover] = Great Salamander: an American batrachian, belonging to Urodela, about 18 inches in length.

Menotti's battery. A galvanic battery consisting of plates of zinc in dilute sulphuric acid, and of copper in sulphate of copper solution, the liquids being separated by a layer of sand.

Mental, (men'tal). [L. *mens*, mind.] Relating to the mind.] *M foramen:* in the ramus of the lower jaw-bone. *v.* Mentum.

Mentha, (men'tha). [The Greek name.]= Mint: a strongly-scented herb belonging to Lamiaceæ *M. piperita*=Peppermint. *M. sylvestris*=Horsemint. *M. viridis*=Spearmint.

Menthene, (men'thēn). [Mentha, *q v.*] = $C_{10}H_{18}$: a hydrocarbon found in oil of peppermint

Mentum, (men'tum). [The Latin word.] Chin: a projection of the lower jaw-bone. In insects the central portion of the labium.

Menyanthes, (men-i-an'thēz)=Buckbean, bogbean. a marsh herb, belonging to Gentianaceæ.

Mephitis, (me-fī'tis). [L *mephitis*, noxious vapour] = American skunk: an animal, resembling the pole-cat, belonging to Mustelidæ

Merak=β Ursæ Majoris: one of the Pointers, *q v.*: a star in the constellation Ursa Major.

Mercaptan, (mẹr-kap'tan). [*Mercurium captans.*]=$H(C_2H_5)S$=Ethylhydricsulphide: intermediate between sulphuretted hydrogen and diethyl sulphide: a colourless inflammable liquid, named from its action on oxide of mercury.

Mercaptans. [Mercaptan, *q.v.*] Correspond to alcohols, in which oxygen is replaced by sulphur.

Mercator's projection, (mẹr-kā'tor). [Mercator, a Danish geographer.] Used for maps intended for sailors, the surface of the earth is assumed to be a plane. *v.* Projection.

Mercuramine, (mẹr-ku'ra-mīn). A basic compound of mercury and ammonia.

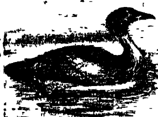
Mercurialis, (mẹr-kū-ri-ā'lis) = Dog-mercury: an herb belonging to Euphorbiaceæ. *M. perennis*=Herb-mercury.

Mercuric, (mẹr-kū'ric). [Mercury, *q.v.*] *M. sulphide* = Cinnabar = HgS. *M. chloride*= corrosive sublimate, $HgCl_2$

Mercurous, (mẹr-kū-rus). [Mercury, *q.v.*] *M. chloride*=Calomel=HgCl.

Mercury, (mẹr'kū-ri). [Classical.] = Quicksilver = Hydrargyrum: a white lustrous metal, liquid between −37° and 662° F., much used in thermometers, barometers, and in amalgams. *M. pendulum:* in which the bob is a vessel partly filled with mercury, the expansion or contraction of which corrects the contraction or expansion of the pendulum.

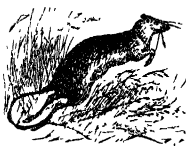
Merganser, (mer-gan'ser). [L. *mergus*, diver; *anser*, goose.] *v.* Mergus


Merganser

Mergus, (mer'gus). [L. *mergus*, diver.] A duck-like bird belonging to Natatores. *M. merganser*=Goosander.

Meridian, (me-rid'i-an). [L. *meridies*, mid-day.] The meridian of any given place is the great circle passing through that place and the two poles; in English maps the distance of the meridian of a place from that of Greenwich is its longitude, all places on any given meridian have noon at the same time, whence the name. *Magnetic M.*: a plane passing through a given point and the N. and S. magnetic poles is the magnetic meridian of that point.

Merino, (me-rē'nō). [The Spanish name] 1. A variety of the sheep, remarkable for the fineness of its wool. 2. The wool itself.


Meriones.

Meriones. Jumping-mouse: a rat-like animal belonging to Muridæ.

Merlangus, (mer-lan'gus)=Whiting: a cod-like fish belonging to Gadidæ.


Merlin

Merlin, (mer'lin). [L. *merula*, black.] A small hawk-like bird.

Merlucius, (mer-lū'si-us). Hake: a cod-like fish.

Merope, (mer'o-pē) [Classical.] One of Pleiades, *q.v.*: the smallest and least bright.

Merops, (mer'ops). [The Latin name.]=Bee-eater: a bird, the type of Meropidæ, living chiefly upon bees and wasps.


Merops.

Meropidæ, (me-rop'i-dē). [Merops, *q.v.*] = Bee-eaters: a family of birds, belonging to Insessores, including the king-fisher, laughing-jackass, &c.

Merostomata, (me-ro-stō'ma-ta). [Gk. *meron*, thigh; *stoma*, mouth.] = Xiphosura: crustacean animals, such as the king-crab, with sessile eyes, and several pairs of articulated limbs, some belonging to the head.

Merry-thought=Furculum, *q.v.*

Merycotherium, (me-ri-kō-thē'ri-um). [Gk. *merykao*, I chew; *therion*, beast.] A camel-like animal, known only by fossil remains, found in pleistocene rocks of Europe and Asia.

Mesaconic, (mez-a-kon'ik). [Aconitic, *q.v.*] *M. acid*, belongs to the Fumaric acid series.

Mesembryaceæ, (mez-em-bri-ā'se-ē.) [Mesembryanthemum, *q.v.*] = Ficoids: herbs and shrubs, with succulent leaves, belonging to Ficoidales.

Mesembryanthemum, (mez-em-bri-an'the-mum). [Gk. *mesembria*, noon, *anthos* flower.] =Fig-marigold: a plant, the type of Mesembryaceæ, *q.v.* *M. crystallinum*=Ice-plant.

Mesencephalic, (mez-en-se-fal'ik). [Gk. *mesos*, middle, *kephale*, head.]=Parietal: belonging to the side of the cranium.

Mesenteric glands, (mez-en-ter'ik). [Mesentery, *q.v.*] Through which the lymphatic capillaries pass, in the folds of the mesentery.

Mesentery, (mez'en-ter-i). [Gk. *mesos*, between; *enteron*, intestine.] The membrane attaching the intestines to the abdomen.

Meseraic, (mez-er-ā'ik). [Gk. *mesaraion*, mesentery.] Mesenteric, *q.v.*

Meso, (mez'ō). [The Greek word.] A prefix implying an intermediate position

Mesopithecus, (mez-ō-pith-ē'kus). [Gk. *mesos*, middle; *pithekos*, ape.] An intermediate variety of the ape tribe, known only by fossil remains; supposed to connect the tailed and tailless varieties of apes.

Mesopodium, (mez-ō-pō'di-um). [Gk. *mesos*, middle, *pous*, foot.] The middle portion of the foot of a molluscous animal. *v.* Mollusca. *cf.* Propodium and Metapodium.

Mesosternum, (mez-ō-ster'num). [Gk. *mesos*, middle, Sternum, *q.v.*] The middle portion of the sternum.

Mesotype, (mez'ō-tīp) [Gk. *mesos*, middle; *typos*, form.]=Natrolite, *q.v.*: a mineral of the zeolite group.

Mesoxalurea, (mez-oks-a-lū're-a). [Mesoxalyl and Urea, *q.v.*]=Alloxan: urea in which some of the hydrogen has been replaced by mesoxalyl.

Mesoxalyl, (mez-oks'a-lil). C_3O_3: a radicle found in alloxan.

Mesozoic, (mez-ō-zō'ik). [Gk. *mesos*, middle; *zoe*, life.]=Secondary, *q.v.*: the second great division of stratified rocks, intermediate between Palæozoic and Cainozoic.

Mestizo, (mez-tē'zo) [The Spanish name.] The offspring of white and red men.

Meta, (met'a). [The Greek word.] A prefix implying beyond.

Metacarpal, (met-a-kàr'pal). [Gk. *meta*, beyond; *karpos*, wrist.] *M. bones*: five small bones, forming the palm of the hand.

Metacarpus, (met-a-kar'pus). [Gk. *meta*, beyond; *karpos*, wrist.] The bones forming the body of the hand.

Metacentre, (met-a-sen'ter). [Gk. *meta*, beyond; *kentron*, centre.] The point of intersection between the lines of the axis of a floating body and of the resulting upward fluid pressure; equilibrium is stable only when this point is above the centre of gravity of the floating body.

Metacetone, (met-a-sē'tōn). [Meta & Acetone,

q v.]=$C_6H_{10}O$: an oily liquid obtained by the distillation of sucrose.

Metachloral, (met-a-klō'ral). [Meta and Chloral, *q.v.*] An anæsthetic obtained by acting on anhydrous chloral with sulphuric acid.

Metagenesis, (met-a-jen'e-sis). [Meta and Genesis, *q v.*] *v.* Genesis. *v.* Development

Metaglobin, (met-a-glob'in). An albuminoid substance.

Metal, (met'al). [*Metallum*, the Latin word.] *v.* Metals.

Metalæ, (met'a-lē)=Hind wings. *v.* Wings.

Metaldehyd, (met-al'-de-hīd). [Meta and Aldehyde, *q v.*] A crystalline substance found in aldehyd.

Metallic, (met-al'ik) [Metal, *q v.*] Relating to metals *M. cyanides* compounds of cyanogen with metals. *M. thermometer*=Brequet's thermometer, *q. v.*

Metalliferous, (met-al-lif'er-us) [Metal, *q v.*, L. *fero*, I bear] *M. rocks:* rocks in which metallic veins are found.

Metallurgy, (met'al-ur-ji). [Metal, *q.v.*; Gk *ergon*, work.]. The science and art of working metals.

Metals, (met'alz). [Metal, *q.v.*] Electro-positive substances, which are usually solid, opaque, lustrous, good conductors of heat and electricity heavier than water, and combine with oxygen to form bases.

- Alkali-metals, *q.v.*
- Alkaline earth-metals, *q v.*
- Earth metals, *q.v.*
- Magnesian metals, *q.v.*
- Iron-like metals, *q.v.*
- Noble metals, *q v.*
- Native metals. those which, like gold, mercury, &c., are found in the metallic condition.

Metameric, (met-a-mer'ik). [Gk *meta*, beyond, *meros*, part.] Having the character of metamerides, *q v.*

Metamerides, (met-a-mer'i-dēz). [Gk *meta*, beyond, *meros*, part.] Bodies having the same number of chemical equivalents, and the same ultimate composition, but differing in character and properties.

Metamorphic, (met-a-morf'ik). [Gk. *meta*, beyond; *morphe*, form.] *M. rocks*=Crystalline schists: unfossiliferous rocks which have been changed in structure since deposition, such as quartz, gneiss, &c. *M. limestone*= Primary limestone

Metamorphosis, (met-a-mor'fō-sis) [Gk. *meta*, beyond, *morphe*, form.] Transformation: in biology, a form of development, *q.v.*

Metanaphthalin, (met-a-naf'tha-lin). [Meta and Naptha, *q.v.*]=Retisterene: a modified form of Naphthalin.

Metapectic acid, (met-a-pek'tic) [Meta and Pectic, *q.v.*] $C_8H_{14}O_9$; a modification of Pectic acid.

Metapedes, (met-ap'e-dēz). [Gk. *meta*, beyond; *pous*, foot.]=Hind legs.

Metapodium, (met-a-pō'di-um). [Gk. *meta*, beyond; *pous*, foot] The hinder portion of the foot, especially in some molluscous animals. *cf.* Mesopodium and Propodium.

Metapophyses, (met-a-pof'i-sēz). [Meta and Apophysis, *q.v.*] Small rounded projections of the last dorsal vertebra of the spinal column.

Metapterygoid, (met-ap-ter'i-goid). [Meta and Pterygoid, *q v.*] A modification of the malleus bone in osseous or bony fishes.

Metastyrol, (met-a-stī'rol). [Meta and Styrolene, *q.v*] = Draconyl: a modification of styrolene

Metatarsal bones, (met-a-tar'sal). [Metatarsus, *q.v*] Five bones forming the lower instep.

Metatarsus, (met-a-tar'sus) [Gk. *meta*, beyond, *tarsus*, instep] The bones forming the body of the foot.

Meteors, (mē'te-orz). [Gk. *meteoros*, high in the air.]=Bolides or shooting stars: luminous bodies falling upon the earth's surface; probably small planets or asteroids ignited by friction when in contact with the atmosphere of the earth.

Meteor-showers. Usually in August, Nov., December, and also at other times; exceptionally bright every 33 years.

Meteorites, (mē'te-ō-rīts). [Meteor, *q.v*]= Aerolites, siderolites, and aerosiderites, *q.v.*

Meterology, (mē-te-or-ol'ō-ji). [Gk. *meteoros*, high in the air, *logos*, discourse.] The science of atmospheric phenomena.

Meter, (mē'ter). [Gk. *metron*, measure.] An apparatus for measurement. *v.* Galvanometer, Endosmometer, Evaporometer, &c.

Methacetic acid=Propionic acid, *q.v*

Methane, (meth'ān) [Methyl, *q v.*] CH_4= Methyl hydride=Marsh gas, *q.v.*=Formene. *v* Hydrocarbons.

Methene, (meth'ēn). [Methenyl, *q v.*] CH_2: one of the second series of Hydrocarbons, *q v*

Methenyl, (meth'e-nil). [Methyl.] CH: the radicle of the second series of Hydrocarbons, *q v.*

Methyl, (meth'il). [Gk. *meta*, beyond; *hyle*, wood.] Me=CH_3· a gaseous hydrocarbon: one of the alcoholic radicles. The radicle of the methylic series. *M. chloride*=Chloroform. *M. hydride*=Marsh gas. *M. hydrate* =Woodspirit = Pyroxylic spirit = Carbinol. *M. oxide* = Methylic ether. *M. phenol* = Kresol. *M. salicylate*=Gaultheric acid.

Methylated, (meth-i-lā'ted). [Methyl, *q.v.*] *M.-acetone*=Ethyl-acetyl *M spirit:* a mixture of wood-spirit and alcohol.

Methyloonylia, (meth-il-kō-nil'i-a)=$C_9H_{17}N$: a modified form of conylia. *v.* Conia.

Methylene, (meth'i-lēn). [Methyl] CH_2: an hypothetical hydrocarbon of the acetylene series.

Methylia, (meth-il'i-a). [Methyl, *q.v.*] = Methylamine=CH_5N: a colourless pungent alkaline inflammable gas, one of the primary monamines.

Methylic, (meth-il'ik). [Methyl, *q.v.*] *M. aldehyde*=Formaldehyde, *q.v.* *M. ether:* an anæsthetic that destroys sensibility but not consciousness.

Methyloxalic acid=Acetic acid, *q.v.*

Metonic cycle, (mē-ton′ik). [Meton of Athens.] A period of 19 years, after which the eclipses, &c., occur again in the same order as before; named from its discoverer.

Metre, (mētr). [The French word.]=39·371 inches: the unit of length in the Metric system. The metre is the 40 millionth part of the circumference of the earth measured through the poles. *Centimetre*=·39371 in. *Decimetre*=3·9371 inches. *Dekametre*=393·71 inches. *Hectometre*=3937·1 inches.

Metric, (met′rik). [Metre, *q.v.*] *M. system* of weights and measures: in use in most Continental countries The unit of length is the French metre, 39·371 inches. the unit of weight, the French kilogramme=2·2 lbs.; the unit of capacity, the French litre=1·75 pints nearly. These are all connected by the litre being the cube of a decimetre, and the kilogramme being the weight of a litre of distilled water at its greatest density.

Meum, (mē′um)=Meu, Spignel, &c.: an aromatic herb belonging to Apiaceæ.

Mezereon, (me-zē′re-on)=Daphne mezereum: a shrub belonging to Thymelaceæ.

Miargyrite, (mi-ar′ji-rit). [Gk. *meion*, less; *argyros*, silver.] A black opaque mineral, chiefly sulphide of silver and sulphate of antimony.

Miaskite, (mi-as′kīt). [Miask, in Ural Mountains.] A granular slaty mineral, chiefly orthoclase and nepheline; a variety of syenite.

Miasma, (mi-as′ma). [Gk. *miaino*, I pollute.] A poisonous exhalation from putrefying matter.

Mica, (mī′ka). [L. *mico*, I sparkle.] A mineral, chiefly silicate of aluminium: has metallic lustre, and is foliated and transparent. *Lithia M.* = Lepidolite. *Pearl M.* = Margarite. *Potash M.*=Muscovite. *M. schist:* one of the metamorphic rocks; a slaty compound of mica and quartz. *M. group of minerals:* includes phlogopite, muscovite, lepidolite, lepidomelane, biotite, and chlorite, usually in scales or plates.

Mice, (mīs). [Mouse, *q.v.*] Small rat-like animals belonging to Rodentia. *Sea M.*, *v.* Errantia. *Shrew M.*=Sorex, *q.v.*

Micraster, (mi-kras′tėr). [Gk. *mikros*, little; *aster*, star.] A sea-urchin found in chalk rocks.

Microcebus, (mi-krō-sē′bus). [Gk. *mikros*, little; *kebos*, ape.] A small animal belonging to Lemuridæ.

Microclin, (mī′krō-klin). [Gk. *mikros*, little; *klino*, I incline.] A mineral, a variety of orthoclase: named from the small angle between the planes of cleavage.

Microcosmic salt, (mi-krō-kos′mik.) [Gk. *mikros*, small.]=$NaH_4NHPO_4+4H_2O$: a phosphate of ammonium and sodium, used as a flux in blowpipe experiments=Stercorite; named from the small size of the crystals.

Microcrith, (mī′krō-krith). [Gk. *mikros*, small; *krith*, barleycorn.]=The weight of an atom of hydrogen.

Microdactylus, (mī-krō-dak′ti-lus). [Gk. *mikros*, small: *daktylos*, finger.]=Sariama=Palamedea cristata: a bird belonging to Grallatores, found in New Guinea.

Microglossus, (mi-krō-glos′sus). [Gk. *mikros*, small, *glossa*, tongue.] A parrot-like bird, belonging to Psittacidæ.

Microlestes, (mī-krō-les′tēz). [Gk. *mikros*, little; *lestes*, beast of prey.] A small kangaroo-like animal, one of the earliest mammals known, of which teeth are found fossil in Stonesfield slates: now called Stereognathus.

Microlithic, (mī-krō-lith′ik). [Gk. *mikros*, small; *lithos*, stone.] Built of small stones.

Micrometer, (mī-krom′e-tėr). [Gk. *mikros*, small, *metron*, measure] Any apparatus for the measurement of very small distances: especially for the accurate sub-division of the field of view of a telescope. *M. screw:* for measuring minute distances, by noting their ratio to the known distance between the threads.

Micromys, (mī′krō-mis). [Gk *mikros*, small, *mys*, mouse.]=Harvest mouse, *q.v.*

Microphytes, (mī-krō-fī′tez). [Gk. *mikros*, small, *phyton*, plant.] Minute plants: a general term for very small forms of vegetable life.

Micropterus, (mī-krop′tėr-us). [Gk. *mikros*, small; *pteryx*, wing.] A duck-like bird with short wings. *M. brachypterus* = Steamer duck=Race-horse.

Micropyle, (mī′krō-pīl). [Gk. *mikros*, small; *pyle*, opening.] The entrance to the ovum by which the embryo passes out.

Microscope, (mī′krō-skōp). [Gk. *mikros*, small, *skopeo*, I view.] A magnifying glass or glasses and fittings, used to see magnified images of very small objects.

Microscopium, (mī-krō-skō′pi-um). [Microscope, *q.v.*] A small constellation near the Zodiac.

Microtherium,(mi-krō-thē′ri-um). [Gk.*mikros*, little, *therion*, beast.] A small mammalian animal known only by fossil remains.

Microzymes, (mī′krō-zimz). [Gk. *mikros*, small; *zyme*, leaven.]=Bacteria, *q.v.*

Microzoaria, (mī-krō-zō-ā′ri-a). [Gk. *mikros*, small; *zoon*, animal.] A term used for Infusoria, *q.v.*

Midas, (mī′das). A small monkey=Marmoset, *q.v.* *M.'s ear*=Auricula Midæ: an herbivorous mollusc.

Midnight sun. In Arctic circle, due north in summer solstice, during which the sun never descends below the horizon.

Midriff, (mid′rif). [*Midhrif*, the A.-S. word.] = Diaphragm, *q.v.*

Miemite, (mī′e-mīt)=Dolomite, *q.v.*

Miesite, (mī′e-sit)=Pyromorphite, *q.v.*

Mignonette, (min-yon-net′). [The French name.]=Reseda odorata: a fragrant herb belonging to Resedaceæ.

Migratory birds which spend the summer in England :



Mignonette.

black-cap, chiff-chaff, cuckoo, hoopoe, martin, nightingale, shrike, swallow, swift, warbler, &c.

Mildew, (mil'dū). [*Mildeaw*, the A.-S. name.] Puccinia graminis, and other minute parasitical fungi, belonging to Coniomycetes, *q.v.*, found on corn stems.

Mile, (mīl). [*Mil.*, the A.-S. word.] *Statute M.*=1760 yds =80 chains. *Nautical or Sea M* =1 minute of latitude=2027 yds. *Metric M.*=French kilometre=1093 yards.

Milfoil, (mil'foil). [L. *mille*, thousand; *folium*, leaf.] Yarrow=Achillea Millefolium =A plant belonging to Asteraceæ, named from its divided leaves.

Miliola, (mil-i-ō'la). [L. *milium*, millet.] A microscopic animal belonging to Foraminifera.

Miliolite, (mil'i-ō-līt). [Miliola, *q.v.*] *M. limestone*: a building stone in French Middle Eocene, chiefly microscopic shells of Miliola.

Milium, (mil'i-um). [F. *mille*, thousand.]= Millet-grass: a plant belonging to Graminaceæ.

Milk, (milk). [*Milc*, the A.-S. word.] A sweet oily liquid secreted by mammalian animals for food for their young: chiefly water and sugar, with casein, butter, &c. *M. sugar:* $C_{12}H_{22}O_{11}$, also called Lactin and Lactose, *q.v.* *M. thistle*=Carduus marianus. *M. vetch*=Astragalus, *q.v.* *M. wort*=Polygala vulgaris, named from being given to cows to increase the supply of milk. *Sea M. wort*=Glaux: belongs to Primulaceæ. *M. worts*=Polygalaceæ, *q.v.*

Milky way. A nebula extending over a large portion (about $\frac{1}{12}$) of the heavens, named from its colour: composed of an enormous number of faint stars. Of the 20 millions of visible stars, 18 millions are in or near the Milky Way. This shows in which direction our universe of stars extends the farthest: the stars being behind each other at enormous intervals.

Mill. *Barker's M.* = Hydraulic tourniquet, *q v.* *Light M.*=Radiometer, *q.v.*

Millefoil=Miltoil, *q v.*

Millepora, (mil-le-pō'ra). [L. *mille*, thousand; *porus*, pore.] Zoantharia tabulata: the reef-building coral, belonging to Milleporidæ.

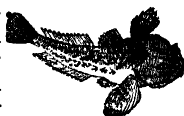


Millepore.

Milleporidæ, (mil-le-por'i-dē). [Millepora, *q.v.*] A division of tabulate corals, approximating to sponges, belonging to Actinozoa.

Miller-Casella Thermometer. [Dr. Miller and Mr. Cassella.] A modification of Six's self-registering thermometer enclosed in a double case, the interval being nearly filled with liquid, a small bell of air being left to allow of the outer case being compressed by the great weight of water above it, without the inner one being affected.

Miller's. *M. dog*=A shark-like fish. *M. thumb*=Cottus gobio: a small fresh-water fish.



Miller's-thumb.

Millerite = Beyrichite = Capillary pyrites = Native protosulphide of nickel.

Millet, (mil'let). [*Milium*, the Latin name.] *M. grass*=Milium. *M. seed*= Holcus sorghum. *German M.*= Setaria Germania. *Great Indian M.*=Guinea corn=Andropogon sorghum. *Indian M.*= Panicum.



Millet.

Milli, (mil'li). [F. *mille*, thousand.] = $\frac{1}{1000}$: Millimetre = $\frac{1}{1000}$ metre=·03937 inch; also called Strick and Line. Milligramme=$\frac{1}{1000}$gramme=·01543 grains. Millilitre=$\frac{1}{1000}$ litre=·06103 cubic inch.

Millier=10 quintals=1 ton nearly.

Million, (mil'yon). [The French word.]=One thousand thousand: 1,000,000.

Millipedes (mil-lip'e-dēz). [L. *mille*, thousand; *pes*, foot.]=Chilognatha: insects belonging to Myriapoda, with the body in rounded segments, each having, usually, two pairs of limbs.

Millstone-grit=Farewell Rock: a sub-division of the Carboniferous formation, between the carboniferous limestone and coal measures: sometimes used for millstones.

Milne-Edwards' classification of animals—

- Osteozaria=Vertebrata.
  - Allantoidians.
    - Mammalia.
      - Monodelphia.
        - Bimana.
        - Quadrumana, &c.
      - Didelphia.
        - Marsupialia.
    - Birds.
    - Reptiles.
  - Anallantoidians.
    - Batrachians.
    - Fishes.
- Entomoza=Anellata.
  - Arthropoda.
    - Insecta.
    - Myriapoda.
    - Arachnida.
    - Crustacea.
  - Vermes.
- Malacozoaria=Mollusca.
- Zoophytes.

Milvus, (mil'vus) [The Latin name.] Kite; a bird of prey, belonging to Falconidæ.

Mimetic, (mi-met'ik). [Gk. *mimetes*, imitator.] Imitative: relating to mimicry, *q v.*

Mimetite, (mim'e-tīt). [Gk. *mimetes*, imitator.]=Mimetesite: one of the lead group of minerals, crystallising in hexagons, chiefly arseniate of lead.

Mimicry, (mim'i-kri). A close involuntary external likeness, causing animals and plants

unlike in structure to be mistaken for each other: almost confined to the tropics. *Laws of M.* in animals: (1), usually of others in same locality; (2), usually by animals less numerous and often rare; (3), usually of animals more numerous. In Mammalia the only example is the Malay Cladobates, which mimics the squirrel. In plants = Pseudomorphism: usually between plants that are far apart.

Mimosa, (mĭ-mō'za). [Gk. *mimos*, imitator.] A plant belonging to Leguminaceæ: *M. pudica*, a sensitive plant. *M. gum*=Acacia gum.

Mimotannic acid = $C_{28}H_{38}O_{17}$: a variety of tannin, *q. v.*

Mimulus, (mim'ū-lus). [Gk. *mimo*, ape.] Monkey-flower, an herb belonging to Scrophulariaceæ; named from the shape of the flowers.

Mimus, (mī'mus). [Gk. *mimos*, an imitator.] Mocking-bird: a bird belonging to Merulidæ which can imitate the cries of other birds.

Mineral, (min'ẹr-al). [The French word.] Inorganic substances of natural origin and homogeneous composition, such as quartz, felspar, &c.; ice and coal are both sometimes considered as minerals. *M. acids*, such as sulphuric, phosphoric, nitric, &c. *M. alkali*=Soda, *q.v.* *M. blue:* a mixture of Prussian blue and clay. *M. carbon:* charcoal found with coal. *M. caoutchouc*=Elaterite: a solid variety of bitumen. *M. chameleon* = Manganic acid; named from changing colour when diluted with water. *M. food-stuffs:* water and salts of various metals. *M. green:* a pigment obtained from carbonate of copper, as also called Scheele's green. *M. oils:* naptha, petroleum, &c., *q.v.* *M. pitch*=Asphalt, *q. v.* *M. purple* =Purple of Cassius, *q.v.* *M. tallow*=Hatchettite: a solid variety of bitumen. *M. tar*=Maltha: a viscid variety of bitumen. *M. veins:* beds, usually thin, of metallic ores; fissures in which are accumulations of chemical and mechanical deposits. *M. waters* contain lime, magnesia, alumina, iron, and silicic soda, in combination with sulphuric, carbonic, and hydrochloric acids. *M. wax*=Petrolene, *q.v.*

Mineralogy, (min-ẹr-al'ō-ji). [Mineral, *q.v.*; Gk. *logos*, discourse.] A sub-division of Geology: the science of the composition and properties of minerals.

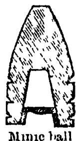
Minerals, groups of—
- Sulphides.
- Oxides.
- Silicates.
- Tantalates, Niobates, &c.
- Arseniates and Phosphates.
- Sulphates.
- Carbonates.
- Fluorides, Chlorides, Bromides, and Iodides.
- Coal.

Soft M.: asbestos, chalcedony, tremolite, which are flexible when in the ground.

Mineralization, (min-ẹr-al-i-zā'shun). [Mineral, *q v.*] The replacement by a mineral, such as silica, of the particles of an organic body.

Mine, (mīn). [The French word.] 1. An excavation made in the earth for the extraction of coal, metallic ores, &c. 2. An excavation made for the purpose of destroying a fort, &c., by the explosion of gunpowder, &c., beneath it.

Miniature, (min'i-a-tūr). [The French word.] A small painting; especially a small portrait painted on ivory.


Minie ball

Minie, (min'i). [Captain Minie.] *M. ball:* a partially hollow cylinder which is expanded to fit the rifle at the time of firing by an iron wedge. *M. rifle:* one adapted to the discharge of the Minie ball.

Minim, (min'im). [L. *minimus*, the least.] 1. A musical note equal to half a semibreve or two crotchets. 2. A small drop of any liquid.


Minim

Minimum thermometer for registering the lowest temperatures reached in a given time. *cf.* Maximum thermometer.

Minium, (min'i-um). [The Latin name.] 1. =Red Lead: a red, greasy, opaque mineral, chiefly oxide of lead. 2.=Cinnabar: a mineral, chiefly sulphuret of mercury.

Mink, (mingk)=Minx, *q.v.*

Minnow, (min'nō). [F. *menu*, little]=Leuciscus phoxinus: a small fresh-water fish.


Minnow.

Minor, (mī'nor). [L. *minor*, less.] *M. planets* =Asteroids: small planets, 139 in number, October 1874, all discovered during the 19th century; the 1st on 1st January 1801; all between Mars and Jupiter. The nearest is 200, and the most distant 300, millions of miles from the sun. The largest is 200, and the smallest 20, miles in diameter. *M. axis:* at right angles to the major axis or diameter. *v.* Ellipticity. *M. chord:* less by a semitone than the corresponding major chord.

Minotaur, (min'o-tawr). [*Minotaurus*, the Latin name.] A fabulous animal said to have the head of a bull on a human body, or *vice versa*.

Minotaur.

Minotto battery, (min-ot'to). A galvanic battery: zinc in sand above, and copper in solution of sulphate of copper below, in the same glass jar, filled up with soft water.

Mint, (mint). [1. A.-S. *mynet*, money. 2. *Minte*, the A.-S. word.] 1. A place where money is coined. 2. Mentha: an herb belonging to Lamiaceæ. *Bergamot M.*=Mentha aquatica. *Cat M.*=Nepeta cataria. *Horse M.*=Mentha sylvestris. *Pepper M.*=Mentha piperita. *Spear M.*=Mentha viridis.

Mintaka=δ Orionis: the western star in the belt of Orion.

Minute, (min'it). [The French word.] 1. $\frac{1}{60}$ part of an hour=60 seconds. 2. $\frac{1}{60}$ part of a degree. 3. Nautical mile, *q.v.*

Minx, (mingks). Mustela vison = Mink = =Minx-otter: a weasel-like animal belonging to Mustelidæ.

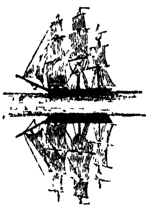
Miocene, (mī'ō-sēn). [Gk. *meion*, less; *kainos*, recent.]=Middle Tertiary: rocks, not found in Britain, excepting in the beds of Hempstead and Bovey-Tracy and in the Isle of Mull, extending from Iceland to Italy, named from the shells of recent testaceæ being less numerous than those of older and extinct forms. *Upper M.* of France=Faluns.

Mira=0 Ceti: a variable star, changing from second magnitude to being totally invisible for 5 months out of every 331 days.

Mirabilite, (mi-rab'il-i-te). [L. *mirabile*, wonderful.]=Glauber salt. a white vitreous mineral, chiefly hydrated sulphate of sodium.

Mirach, (mī'rak). [The Arabic name.]=β Andromedæ. the second star in the constellation Andromeda.

Mirage, (mi-razh') [The French word.] An optical delusion, owing to refraction, by which objects appear to be in the air or beneath the surface of the ground.


Mirage

Mirbane, (mir'bān). *Essence of M.* = Nitrobenzol, *q.v.*

Mirror, (mir'ror). [*Miroir*, the French word.] Any polished surface from which rays of light are regularly reflected, so that the image is still distinguishable. *Burning M.*: by which heat rays are converged to the focus. *Conjugate M.*: one having its axis in a line with that of another, so that light or heat in the focus of one is reflected to the focus of the other. *Parabolic M.*, one of which the section is a portion of a parabola. *Spherical M.*: one of which the surface is a portion of a sphere.

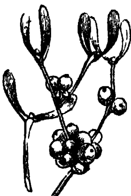
Mishmees, An Asiatic people.

Mispickel, (mis'pik-l) [*Mispuckle*, the German word.]=Arsenical pyrites=FeSAs: the common ore of arsenic; a white brittle mineral of the iron group crystallising in rhombs.

Mirfak, (mir'fak). [The Arabic name.]=α Persei: the chief star of the constellation Perseus.

Mississaga. An American people.

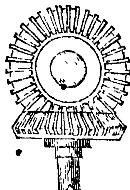
Mistletoe, (mizl'tō). [*Mistelta*, the A.-S. name.]=Viscum album: an evergreen plant, parasitic on trees, belonging to Loranthaceæ.


Mistletoe.

Mistral, (mis'tral) [The French word.] A steady N.W. wind blowing from France across the Mediterranean.

Mites, (mīts). [The A.-S. name.] A division of Acarina, *q.v.* *Garden M.* =Trombidideæ. *Water M.*=Hydrachnidæ, *q.v.*

Mitre, (mī'tr). [*Mitra*, the Latin word.] *M. wheels*, two wheels revolving in contact, but in different planes, so as to transfer motion from one plane to another. *M. mushroom* = Morchella mushroom.


Mitre-wheels.

Mitral valve, (mī'tral). [Mitre, *q.v.*] A valve closing the opening between the left auricle and ventricle of the heart; shaped like a mitre.

Mixolydian key=Key of G. *v.* Keys.

Mizar, (mī'zar). [The Arabic name.]=ζ Ursæ-majoris: a star in the constellation Ursa-major.

Moa, (mō'a) [The native name.]=Dinornis, *q.v.*

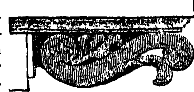
Mobility, (mo-bil'i-ti) [*Mobilitas*, the Latin word.] Capacity for being moved.

Mocha stone [Mocha, in Arabia.] = Moss-agate, *q.v.*

Mocking-bird = Mimus, *q.v.*


Mocking bird

Modillion, (mō-dil'yon). [*Modillon*, the French word.] A small ornamented console, used to support a Corinthian cornice.


Modillion.

Modulation, (mod-u-lā'shun) [*Modulatio*, the Latin word.] The arrangement of a piece of music in a variety of keys, so that the transitions are harmonious.

Modulus, (mod'ū-lus). [The Latin word.] 1. An arbitrary measure in architecture, usually the half diameter of a column. 2. In mathematics: a constant co-efficient.

Moenas, (mē'nas). *M. carcinus*=Shore-crab: when young = Megalopa, when very young=Zoea.

Mohair, (mō'hār) [*Moire*, the French word.] 1. The hair of the Angora goat, resembling alpaca. 2. A textile fabric made of the hair.

Moholi, (mō'hō-li). =Galago moholi: a small animal belonging to Lemuridæ, found in S. Africa.


Moholi.

Mohr, (mōr) = Gazella mohr: an animal re-

sembling the antelope, found in S. Africa.


Mohr.

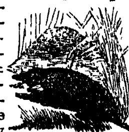
Moire, (mwâr). [The French word.] 1. Mohair, *q.v.* 2. *M. antique* = Watered silk: a variety of silk, in which the colour has different shades. 3. *M. metallique* = Crystallised tin-plate: iron-plate, coated with tin, and having the coating more or less removed by acids, so as to give a variety of shades to the colour.

Molars, (mō'larz). [L. *mola*, mill.] = Grinding-teeth: broad teeth, at the side of the mouth, adapted for grinding. *v.* Grinders.

Molasse, (mol-las'). [F. *mollasse*, flimsy.] A soft sandstone, belonging to Miocene, found in Switzerland.

Molasses, (mō-las'ez). [*Melasse*, the French word.] Treacle: an uncrystallisable syrup obtained in the preparation of sugar.

Mole, (mōl). [*Mol*, the Dutch name.]=Talpa: a small insectivorous animal belonging to Insectivora. *M. bat*=Orthagoriscus mola. *M. cricket*=Gryllotalpa vulgaris. *M. rat*=Rat-mole=Spalax=Georychus. *Golden M.*=Chrysochloris. *Water M.* = The local name for the New Zealand ornithorhynchus.

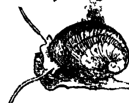

Mole.

Molecular, (mō-lek'ū-lar). [Molecule, *q.v.*] Related to molecules. *M. forces:* forces resulting from the inter-action of molecules: usually imperceptible except by effects of heat, light, &c.

Molecule, (mol'e-kūl). [The French word.] The smallest particle of a substance which can exist by itself. In the case of a chemical element equal, at least, to two atoms.

Moles, (mōlz). [Mole, *q.v.*] Talpidæ: a subdivision of Insectivora, *q.v.*

Mollusca, (mol-lus'ka). [L. *mollis*, soft.] A primary division of animals: soft-bodied, boneless animals, having usually a shell, nerves, double circulation of white blood, and senses of sight and taste. The shells are usually thicker in those living near the sea. *Palæozoic M.:* much larger than modern. *Shell-bearing M.*=Testaceæ.



Molluscs.

M., Classifications of—

1. Mollusca—
   Cephalopoda.
   Pteropoda.
   Gasteropoda.
   Lamellibranchiata.
   Molluscoidea—
   Tunicata.
   Ascidians.

2. By Huxley—
   Mollusca-
   Odontophora.
   Lamellibranchiata.
   Molluscoida—
   Ascidioida.
   Brachiopoda.
   Polyzoa.

Molluscoida, (mol-lus-koi'da). [Mollusca, *q.v.*; Gk. *eidos*, form.] Ascidians, sea-mats, &c = Polyzoa, Brachiopoda, and Ascidians. animals living in aggregations, and forming a primary division of the animal kingdom, but strongly resembling the mollusca in many points.

Molossus, (mō-los'sus)=Bull-dog-bat: a bat having a short head and a long tail; found chiefly in Asia and S. America.

Molothrus, (mō-lo'thrus). A bird, somewhat resembling the starling; also called Cow-bunting and Cow-bird.

Molybdates, (mol-ib'dāts). [Molybdenum, *q.v.*] Compounds of molybdic acid with bases.

Molybdenum, (mol-ib-dē'num). [Gk. *molybdaina*, lead.]=Mo^{ii}, Mo^{iv}, and Mo^{vi}: a white, brittle, infusible metal.

Molybdic acid, (mol-ib'dik). [Molybdenum, *q.v.*]=MoO_3: an acid substance; also called Molybdic anhydride.

Momentum, (mō-men'tum). [L. *momentum*, movement.] The amount of energy in a moving body=the mass multiplied by the velocity; also called impetus and moment.

Momordica, (mō-mor'di-ka). [L. *mordeo*, I bite.]=Squirting cucumber: a plant belonging to Cucurbitaceæ. *M. charantia*=Balsam apple. *M. elaterium*=Squirting cucumber.

Monachus, (mon'a-kus). A variety of the seal, *q.v.*

Monadaria, (mon-a-dā'ri-a). De Blainville's term for Infusoria.

Monadelphia, (mon-a-delf'i-a). [Gk. *monos*, alone, *adelphos*, brother.] A sub-division of plants, including those of which the stamens are united into one bundle.


Monadelph.

Monads, (mon'adz). [Gk. *monos*, one.] 1. Monatomic elements, such as hydrogen. *cf.* Dyads, triads, &c. 2. Microscopic infusoria.

Monamides, (mon'a-midz). [Monos and Amide, *q.v.*] *Primary M.* = Amides derived from ammonia, in which one atom of hydrogen is replaced by an organic radicle. Ex. Acetamide= $H_3N-H+(C_2H_3O.)$ *Secondary M* =Ammonia in which two atoms of hydrogen are so replaced. *Tertiary M.*=Ammonia in which all three atoms of hydrogen are replaced.

Monamines, (mon'a-mīnz). [Monos and Amine, *q.v.*]=Monammonias: bases derived from ammonia by the substitution of an organic base for the whole or part of the hydrogen. *Primary M.*, in which one atom of hydrogen is displaced = Amide bases.

Secondary M., in which two atoms of hydrogen are removed = Imide bases. *Tertiary M.*, in which the whole of the hydrogen is displaced=Nitrile bases.

Monasite, (mon'a-sīt). A mineral, chiefly phosphate of cerium and lanthanum.

Moncrieff gun-carriage: for lowering the gun when fired, and raising it again when loaded; intended to protect the gunners while loading.

Monera, (mon'e-ra) [Gk. *monos*, one]= Moneres. A class of Protozoa, consisting of mere expansions of jelly-like protoplasm, covering a large part of the bed of the sea in more or less continuous sheets. Supposed to be "the first ancestor of all living things:" developed into Amœba, and eventually into the higher forms of animal life.

Money-wort = Lysimachia nummularia. A prostrate herb, belonging to Primulaceæ.

Mongol, (mong'gōl) *v.* Mongolian.

Mongolian, (mong-gō'li-an). A division of the human race. Yellow: with flat features, high cheek bones, and black hair. Kalmucs, Chinese, Mantchures, Japanese, &c.

Mongoose, (mon'goose). A variety of the Ichneumon, found in Ceylon, which feeds on snakes.

Monimiaceæ, (mon-i-mi-ā'se-ē). Aromatic plants, chiefly S. American, somewhat resembling the laurel.

Monitor, (mon'i-tor). [The Latin name.] A lizard-like reptile, found on river banks, belonging to Sauria: named from being often found in the neighbourhood of the crocodile. *M. of Nile*=Lacerta Nilotica.

Monk's. *M. hood*=Aconitum napellus: a very poisonous plant. *M. rhubarb*=Rumex alpinus.

Monkey, (mung'ki). [*Monicchio*, the Italian name.] A general term for tailed apes. *Capuchin M.*=Cebus. *Diana M.*=Cercopithecus Diana. *Dog-headed M.*=Cynocephalus. *Howling M.*=Mycetes. *Lazy M* = Loris. *Proboscis M.*=Semnopithecus nasius. *Silver-haired M.* = Lagothrix Humboldii. *Slow M.*=Semnopithecus. *Squirrel M.*= Callithrix sciureus. *Weeping M* =Sajous.

Monkeys = Simiidæ: *M. of Old World*= Quadrumana: only some have prehensile tails. *M. of S. America*=Pedimana: with prehensile tails.

Mono, (mon'o). [Gk. *monos*, single.] A prefix, implying only one.

Monobasic, (mon-ō-bā'sik). [Mono and Base, *q.v.*] *M. acids:* having one atom of replaceable hydrogen in each molecule; *e.g.*, HCl; HNO_3. *M. salts*=M. acids regarded as salts of hydrogen.

Monoceros, (mon-os'e-ros). [Gk. *monos*, single; *keras*, horn.]=The Unicorn: a southern constellation.

Monochlamydeæ, (mon-ō-klam-id'e-ē). [Gk. *monos*, single; *chlamys*, cloak.] A subdivision of Exogenous plants, including those having only a calyx and no corolla. *v.* De Candolle.

Monochlorides, (mon-o-klō'rīdz). [Monos and Chloride, *q.v.*]=Protochlorides: compounds of one atom of a monad with one atom of chlorine.

Monochord, (mon'ō-kawrd). [Gk. *monos*, single; *chorde*, string.] A single string: an instrument of one string only, used for illustration of the laws of sound.

Monochroite, (mon-ō-krō'īt). [Monos and Chromium, *q.v.*] A soft red mineral, chiefly chromate of lead.

Monochromatic, (mon-ō-krō-mat'ik). [Monos and Chromatic, *q v.*] Of one colour only. *M. light:* light of one colour. *Yellow M. light:* exerts no chemical action.

Monoclinic, (mon-ō-klin'ik) [Gk. *monos*, single; *kleineo*, I incline.] Inclining in one direction. *M. minerals:* have one axis obliquely inclined to the others.

Monocotyledons, (mon-ō-kot-i lē'donz). [Monos and Cotyledon, *q.v.*]=Endogens, *q v.* plants having but one seed leaf. *cf.* Dicotyledons. *v* Jussieu.

Monodelphia, (mon-o-del'fi-a). [Gk. *monos*, single; *delphys*, womb] Animals, belonging to Mammalia, with but one uterus, including all mammals but Marsupialia and Monotremata. *cf.* Didelphia and Ornithdelphia.

Monodon, (mon'o-don). [Gk. *monos*, single; *odous*, tooth] *M. monoceros*=Narwhal, *q.v.* =Sea Unicorn.

Monœcious, (mon-ē'si-us). [Gk. *monos*, single; *oikos*, house.]=Hermaphrodite: with both sexes in the same individual; used more especially for plants.

Monomyary, (mon-ō-mī-ā'ri-a). [Gk. *monos*, single; *myon*, muscle.] Bivalve molluscs, all marine, including the oyster, &c., having only one large muscle to each valve: a division of Lamellibranchiata, *q v.*

Monopetalæ, (mon-ō-pet'a-lē). [Mono and Petal, *q.v.*]=Gamopetalæ: plants having the petals of the flowers more or less united. A sub-division in Jussieu's classification, *q.v.*

Monopetalous, (mon-ō-pet'a-lus). [Mono and Petal, *q.v.*] Having the petals joined so as to form but one.


Monopetalous.

Monopnoa, (mon-op'no-a). [Gk. *monos*, single; *pnoe*, breath.] Owen's term for a sub-division of reptiles, including all those that do not live in the water.

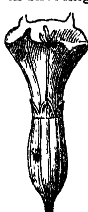
Monopodia, (mon-ō-pō'dia). Branch system formed by lateral shooting.

Monosepalous, (mon-ō-sep'a-lus). [Monos and Sepal, *q.v.*] Having the sepals of the calyx united.

Monosomatia. Used by Siebold for a sub-division of Rhizopoda.

Monosymmetrical, (mon-ō-sim-met'ri-kal). [Monos and Symmetrical, *q.v.*] Used of flowers, &c., which can be divided into two exactly equal halves.

Monothalamous, (mon-ō-thal'a-mus). [Gk. *monos*,


Monosepalous.

single; *thalamos*, chamber.] Having but one chamber or cavity. *M. shells:* such as of Mollusca and Foraminifera.

Monotis, (mon-ō'tis) [Gk. *monos*, single; *ouas*, ear.] *M. bed*=Guinea bed, *q.v.*

Monotremata, (mon-ō-trē'ma-ta). [Gk. *monos*, single; *trema*, opening] = Ornithodelphia: animals, belonging to Mammalia, having a cloaca common to the intestinal, generative, and urinary organs; include only Ornithorhynchus and Echidna; resemble birds in having but one intestinal orifice, resemble reptiles in having a double clavicle, in other respects resemble Mammalia; found only in Australasia. *M. glands*, *v.* Glands.

Monotropa, (mon-ot'ro-pa). [Gk. *monos*, single; *tropos*, turning.]=Bird's nest: an herb, belonging to Monotropaceæ, named from the racemes all turning one way.

Monotropaceæ, (mon-ō-trō-pā'se-ē). [Monotropa, *q.v.*] Fir-rapes: plants of which Monotropa is the type, sometimes considered as part of Ericaceæ.

Monoxides, (mon-oks'īdz). [Mono and Oxide, *q.v.*] Of the type H_2O: strongly basic, in which two atoms of a monad (or one atom of a dyad) unite with one atom of oxygen.

Monradite, (mon'ra-dit). A mineral, chiefly silicate of magnesia.

Monro. *Foramen of M.*, *v.* Foramen.

Monsoon, (mon-soon'). [Arabic *mausun*, season.] A wind common in the Indian Ocean: blows from S.W. from April to October; blows from N.E. from October to April.

Mons Mænalus, (monz-mē'na-lus). [The Latin name.] A northern constellation, of small stars only.

Monster, (mon'ster). [*Monstrum*, the Latin word.] Any organization of which the development is abnormal; often used with reference to large size as=enormous; but properly only for some unusual form of development.

Mont Blanc. A mountain in the moon, *q v.*

Month, (munth). [*Monath*, the A.-S. word, from *mona*, moon.] A division of the year, a period of 30 or 31 days, excepting February.

Lunar month = Lunation, *q.v.* = Synodic month.		29d	12h	44m	2s	
Tropical	month	=27	7	43	4	[malistic.
Anomalistic	,,	=27	13	18	37	*v.* Ano-
Sidereal	,,	=27	7	43	11	
Nodical	,,	=27	5	5	35	
Calendar	,,	=January, February, &c.				

Montia, (mon'tia). [Signor de Monti.]= Blinks: a small herb belonging to Portulaceæ.

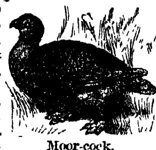
Monureides, (mon'u-rīdz). [Mono and Ureide, *q.v.*] *v.* Ureides.

Monylene, (mon'i-lēn)=Elaene, *q.v.*

Moon. The satellite of the earth, revolving round it once in about 28 days. *v.* Lunation. It once existed in a nebulous form, and is now condensed by gravitation, has great range of temperature, from 500° F. downwards; has a diameter 2160 miles: volume $=\frac{1}{49}$, area$=\frac{1}{13}$, weight$=\frac{1}{80}$, of earth; distance, 238 790 miles: has no atmosphere; supposed once to have been peopled, and to have been lighted and warmed by the earth, which was probably then a sun. In maps of the moon, the surface is divided into four quadrants, on which the various mountains, valleys, clefts, seas, &c., are named after philosophers, &c., of the earth, as Aristotle, Copernicus, Herodotus, &c. The seas are now dry flat hollows or plains, named Mares, as Mare serenitatis, &c

Moons, (moonz). [*Mona*, the A.-S. name.] =Satellites: secondary planets, revolving round some of the primary planets. Saturn has 8 moons, Uranus and Jupiter 4 each, Neptune and the Earth 1 each. All the moons revolve from west to east, except in the case of Uranus, whose moons go from east to west. *M stone*, a variety of felspar. *M.-wort*=Botrychium, *q.v.*

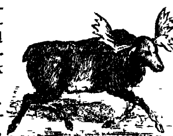
Moor, (moor). [*Mor*, the A.-S. word.] A tract of waste land, a heath. *M. cock*=Red grouse= Lagopus Scoticus. *M. grass* = Sesleria. *M harrier* = Circus rufus, a hawk-like bird. *M. heath* = Gypsocallis, a plant belonging to Ericaceæ. *M. hen*=Gallinula, *q.v.*=Water-hen.


Moor-cock.


Moor-hen

Moorish architecture= Saracenic: marked by arches (more or less of the horse-shoe form), domes, minarets, and by elaborate decoration, in which animals are never represented.

Moose, (mōos). [The native Indian name.] = Moose-deer = Cervus alces= Alces Malchis: a large animal belonging to Cervidæ, also called elk and eland.


Moose.

Moraceæ, (mo-rā'se-ē). [Morus, *q.v.*] = Morads=Fig, mulberry, &c : trees and shrubs, belonging to Urticales, many of which yield caoutchouc.

Moraines, (mō-rānz'). [The French word.] Accumulations of rough angular stones, of all sizes, at the edges of glaciers. *Medial M*, caused by the confluence of two glaciers.

Morass, (mō-ras'). [*Marais*, the French word.]=Marsh : a tract of soft wet ground.

Morchella, (mor-kel' la). [The German name.] A fungus, one species of which is edible. *M. esculenta*=Morel.

Mordants, (mor'dants). [L. *mordeo*, I bite.] Substances, such as acetates of iron and zinc, alumina, &c., used in dyeing to fix the colours, by combining with both fibre and dye-stuff.

Morels, (mō-relz'). [*Morelle*, the French name.]=Ascomycetes=Morchella, *q.v.*

Moric acid, (mō'rik). [Morus, *q.v.*]=Morin;

a white crystalline variety of tannic acid obtained from Fustic.

Morin's apparatus. [General Morin.] For measuring the distances through which falling bodies pass in given times: a modification of Attwood's machine, in which the course of the falling body is marked by a pencil.

Morinda, (mō-rin'da.) [*Morus Indica.*] = Morus Indicus=Indian mulberry: a plant belonging to Moraceæ.

Morindin, (mo-rin'din.) [Morinda, *q.v.*] A yellow dye-stuff, from Morinda citrifolia; from which alizarin is obtained.

Moringa, (mō-ring'a). [The Malabar name] A plant belonging to Moringaceæ, *q.v.* *M. pterygosperma* = Ben-nut tree, from the seeds of which oil of ben is extracted.

Moringaceæ, (mō-ring-gā'se-ē). [Moringa, *q.v*]=Moringads: trees, with pinnate leaves, and white flowers, belonging to Violales.

Moringic acid, (mō-rin'jik)) [Moringa, *q v*] $C_{15}H_{28}O_2$: an oily acid substance obtained from oil of ben.

Morintannic acid, (mo-rin-tan'nik). [Morus and Tannic, *q.v.*] $C_{13}H_{10}O_6$: a yellow crystalline variety of tannic acid, obtained from old fustic or Morus tinctoria.

Morion, (mō'ri-on). A black crystalline variety of native silica.

Morison's arrangement of plants: according to the fruit. *v.* Botanical systems.

Moritannic acid, (mō-ri-tan'nik). [Morus and Tannic, *q.v.*] = $C_{18}H_{16}O_{10}$ = Tannin of fustic or Morus tinctoria: a variety of tannic acid.

Morocco leather, (mo-rok'kō) [M. in Africa.] =Tanned skin of Barbary goat.

Moronobea, (mor-ō-nō'be-a). [*Monorobo*, the native name.] *M. coccinea*=Hog gum-tree.

Moroxite, (mor'oks-it). A green mineral, chiefly phosphate of calcium: a variety of apatite.

Morphia, (mor'fi-a) [Morpheus, god of sleep] =$C_{34}H_{38}N_2O_6$: one of the natural bases found in opium. a crystalline nitrile base, with powerful narcotic properties.

Morphine, (mor-fēn'). [The French word.] =Morphia, *q.v.*

Morphium, (mor'fi-um)=Morphia, *q v.*

Morpholites, (mor'fō-lits). Aggregations of carbonate of lime and marl.

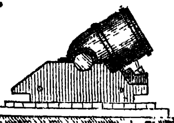
Morphology, (mor-fol'ō-ji). [Gk *morphe*, form ; *logos*, discourse.] The science of the form and structure of animals and plants.

Morrhua, (mō'ru-a). Cod, haddock, &c : a fish belonging to Gadidæ. *M. æglefinus*= Haddock. *M. minuta*=Bower. *M. vulgaris* =Cod.

Morse, (mors). [*Morj*, the Russian name]= Trichechus rosmarus; also called Walrus, *q.v.*

Morse's telegraph. [Prof. Morse of America.] A writing telegraphic apparatus, by which signs representing letters are written o . a strip of paper. *v.* Telegraph.

Mortar, (mor'tar). [*Mortarium*, the Latin word.] A piece of ordnance, usually short and of large bore, used for throwing shells. *M. shell*, usually fired at a high angle, so as to fall behind parapets, penetrate roofs,&c.

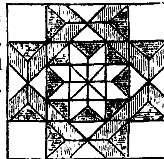

Mortar.

2. A strong vessel used for trituration. 3. A compound of lime and water used in bricklaying.

Mortification, (mor-tif-i-kā'shun). [L. *mors*, death; *facio*, I make.]=Local death: the death of any member, or portion, of the body, by failure of the circulation.

Morus, (mō'rus). [The Latin word.]=Mulberry: a tree belonging to Urticaceæ. *M. alba*=White mulberry, the leaves of which are food for silkworms. *M. Indica*=Morinda = Indian mulberry. *M. tinctoria*= Old fustic

Mosaic, (mō-zā'ik). [*Mosaique*, the French word] Inlaid work, in which painting is imitated by the use of small pieces of variously coloured marble, glass, &c. *M. gold*: an alloy of copper and tin.


Mosaic.

Mosandrite, (mō'san-drit). A brown translucent mineral, chiefly hydrated silicate of calcium, cerium, lanthanum, &c.

Mosasauroids, (mos-a-saw'roidz) [Mosasaurus, *q v.*; Gk. *eidos*, form] Gigantic reptiles, known by fossil remains in cretaceous rocks. One is 75 feet in length.

Mosasaurus, (mos-a-saw'rus). [River Meuse: Gk. *sauros*, lizard.] An aquatic reptile, of great length, known only by fossil remains found in chalk rocks, near Maestricht.

Moschatel, (mos'ka-tel). [Gk. *moschos*, a young shoot.] = Moschatella = Adoxa moschatellina : a small succulent herb. *v.* Adoxa.

Moschidæ, (mos'ki-dē). [Moschus, *q.v.*] Musk-deer, &c.· quadrupeds, belonging to Ruminantia, intermediate between the camel and the deer.

Moschus, (mos'kus). [Gk. *moschos*, a calf.] An animal resembling the deer, but without horns; the male has sometimes a musk-bag containing musk. *M. javonicus*=Cheorotain. *M. moschiferus*=Musk of Thibet.

Mosque, (mosk). [*Masjid*, the Arabic word.] A place of Mohammedan worship.

Mosquito, (mos-kē'tō). [The Spanish word.] A small fly, remarkable for its stinging powers. 1.=Culex mosquito. 2.=Simulium.

Moss, (mos). [*Meos*, the A.-S. name.]=Lycopodium, &c. *v.* Mosses. *Bog M.*=Sphagna. *Cord M.*=Hydrometrica. *Hair M.*=Polytrichum. *Iceland M.*=Cetraria islandica: a lichen. *Irish M* =Chondrus crispus. *Reindeer M.* = Cenomyce rangifera = Cladonia

rangifera. *M. agate* = Mocha stone. *M. campion*=Silene acaulis.

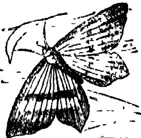
Moss-fruit=Sporogonium.

Mosses=Muscales a primary division of Acrogens, *q.v.*; small flowerless plants fructified by spores. *Scale M.*=Hepaticæ. *Classification of M.*—Bryaceæ=True mosses. Sphagnaceæ, Andreæceæ, Phascaceæ } only a few genera of each.

Motacilla, (mot-a-sil'la) Wagtail: a small bird belonging to Sylviadæ, *q.v.* *M. atricapilla*=Black-cap. *M. sialis*=Blue-bird.

Motella, (mo-tel'la). A cod-like fish belonging to Gadidæ. *M. vulgaris*=Whistle-fish. *M. glaucus*=Mackerel midge.

Moth, (moth). [*Modhe*, the A.-S. word.] Nocturnal insects forming a division of Lepidoptera, *q v.* *Death's-head M.*=Sphinx atropus. *Flame M.*=Anticlea rubidata *Goat M.* = Cossus ligniperda. *Grass M.*=Crambus. *Hawk M.*=Sphinx. *Hazel M.*=Tortrix sorbiana. *Hornet M* = Sphinx. *Humming-bird hawk M* =Macroglossa titan. *Tiger M* =Arctia caja.


Moth.

Mother. *M. liquor*=Residue of a solution. *M. of pearl.* 1.=Botys urticalis: a moth belonging to Lepidoptera. 2.=Irridescent layers of shells. *M. of vinegar*=The dregs of a solution from which vinegar has been obtained. *M.-wort*=Leonurus.

Moths, (moths). Nocturnal insects forming a division of Lepidoptera, *q v.* *v.* Holometabola. Some moths are crepuscular, or active during twilight *cf.* Butterflies.

Mot-mot, (mot'mot). [Named from the note] =Momotus=Prionites: a showy bird, somewhat resembling the toucan, with a long ciliated tongue, found in Brazil.

Motores oculi. The third pair of cerebral nerves, which move most of the eye-muscles.

Mouflon,(moof'lon)=Capra Ammon=Siberian goat: a variety of the sheep found in Corsica, &c.

Moulds, (mōldz). [*Molde*, the A.-S. word]= Physomycetes, &c.: minute fungi growing on damp organic matter. *v.* Fungales. *Bread M.*=Ascophora mucedo. *Potatoe M.*=Botrytis infestans.

Mould's classification of

Hyphomycetes—
- Yeast fungus.
- Vinegar fungus.
- Blue mould.

Ascomycetes—
- Morels.
- Truffles.
- Hop-blight, &c.

Physomycetes—
- Felt mould.
- Bread mould.
- Pear mould.

Moulting, (mōlt'ing). [*Moele*, the Welsh word.] =Ecdysis: a casting-off of the skin or feathers; a renewing of the outer integment, common with birds, serpents, &c.

Mountain. *M. ash* 1.=Pyrus aucuparia. 2.=Eucalyptus of New Zealand. *M. blue*= Azurite, a blue copper ore. *M. cork*= Mountain leather, *q.v* *M. crab* = Black crab = Land crab. *M. ebony* = Bauhinia porruta. *M. feather:* a variety of asbestos *M. green* = Malachite: green carbonate of copper. *M. leather.* a matted fibrous variety of asbestos. *M. limestone* = Carboniferous limestone: belongs to Carboniferous strata: thick rocks underlying the coal. *M. linnet* =Linaria montaria. *M. meal*=Bergmehl, *q.v.* *M. paper:* a variety of asbestos. *M. soap*=Steatite, *q.v.* *M. willow*=Salix mu-sinites. *M. wood:* a variety of asbestos.

Mountains in the moon. Named after philosophers, travellers, &c., and after the mountains of the earth; many higher than Mont Blanc.

Mouse, (mous). [*Mûs*, the A -S. name.]= Mus, *q.v.*: a small burrowing animal belonging to Rodentia. *Dor-M.* = Myoxus avellanarius *Field M.*=Arvicola vulgaris. *American M.*=Mus leucopus *Harvest M.* =Mus messorius. *Jumping M.*=Meriones Hudsonicus. *Shrew M.* = Erd-shrew, *v.* Shrewmouse. *M. deer:* a small deer of Ceylon. *M. car*=Myosotis. *Golden M ear* =Hieracium aurantiacum. *M. ear chick-weed*=Cerastium. *M. tail*=Myosurus.

Mucamide, (mū'ka-mīd). [Mucus and Amide, *q.v.*] $C_6H_{12}N_2O_6$· a white crystalline substance from ammonia on mucic ether.

Mucedines, (mū'se-dinz). [L. *mucus*, slime.] =White moulds: fungi belonging to Hyphomycetes, found on decaying plants, mostly white delicate threads; include yeast and vinegar fungus, potatoe mould, &c.

Mucic, (mū'sik). [L *mucus*, slime] *M. acid* $=C_6H_{10}O_8$: a crystalline, dibasic acid substance obtained by the oxidation of milk-sugar, gum, &c. *M. ether* = Mucate of ethyl.

Mucilage, (mū'si-lāj). [The French word.]= Bassorin=$C_6H_{10}O_5$: a variety of gum, insoluble in water.

Mucin, (mū'sin). [Mucus, *q v.*] 1. A colloid constituent of gluten. 2. A constituent of animal mucus.

Mucor, (mū'kor). [Mucus, *q.v.*] A fungus-like plant, of minute size, sometimes found growing on the skin.

Mucoraceæ=Physomycetes=Mucorini: erect thread-like fungi, of minute size, found on decaying animal and vegetable matter.

Mucous, (mū'kus). [Mucus, *q.v.*] *M. membrane:* the modification of the skin which lines all the interior cavities of the body; redder, more sensitive, and bleeds more readily, than the outer skin. *M. fermentation:* of which mucic acid is one of the chief products.

Mucus, (mū'kus). [L. *mucus*, slime.] An alkaline glairy fluid secreted by, or aggregated on, the mucous membrane, and serving as a lubricant.

Mud. A solution in water of finely-powdered minerals. *M. eel*=Siren. *M. fish, v.* Mudfishes. *M turtles*=Soft tortoises=Trionycidæ. *M volcanoes, v.* Volcano. *M. worms* =Limicolæ. *M. wort*=Limosella: a small aquatic herb.

Mudfishes=Lepidosiren and Ceratodus=Dipnoi. connect fishes and amphibia, the highest order of fishes, having filamentary limbs, a heart with two auricles and one ventricle, and lungs; live in the mud of marshy tracts: formerly considered to be reptiles.

Mugil (mū'jil). [The Latin name.]=Mullet: a fish belonging to Mugilidæ. *M. capito*= Gray mullet.

Mugilidæ, (mū-jil'i-dē). [Mugil, *q.v.*; Gk. *eidos,* form.]=Mullets: a family of fishes, with cylindrical scaly bodies, belonging to Acanthopteri.

Mug-wort, (mug'wort)=Artemisia vulgaris.

Muiscas. An American race.

Mulatto, (mu-lat'tō). [*Mulato,* the Spanish word.] The offspring of white and black parents. *M. crab:* a land crab.

Mulberry, (mul'ber-ri). [*Murberie,* the A.-S. name.]=Morus, *q.v. Indian M.* = Morus Indica.


Mulberry.

Muldan, (mōl'dan). [Herr Von Mulda.] A variety of Orthoclase, *q.v.*

Mule, (mūl). [*Mulus,* the Latin name.] 1. The hybrid offspring of a horse and ass 2.=Mule-jenny: a machine for spinning cotton; named from combining the principles of the jenny and water-twist frame, two earlier inventions.

Mulhouse blue. An alkaline solution of shell-lac and aniline.

Mullein, (mul'lin). [*Molenc,* the French name.]=Verbascum, *q.v.*

Muller's classification of fishes. *v.* Fishes.

Muller's glass=Hyalite: a variety of opal, *q.v.*

Mullet, (mul'let). [*Mulet,* the French name.] *Gray M.*=Mugil, *q.v. Red M.*=Mullus.

Mullion, (mul'yun). [F. *moignon,* stump.] A bar, usually of stone, dividing a window into vertical compartments. *cf.* Transoms.


Mullion.

Multiple, (mul'ti-pl) [L. *multus,* many; *plico,* I fold.] The sum of a number of equal quantities, 12 is a multiple of 6, of 4, of 3, of 2, and of 1. *Least common M.* =L.C.M.: the smallest number that can be divided, without a remainder, by each of any given numbers. *M. images, v.* Image.

Multiplier, (mul'ti-pli-er). Multiple, *q.v.*= Galvanometer, *q.v.*

Multungula, (mul-tung'ū-la) [L. *multus,* many; *ungula,* hoof.] Giebel's term for elephants, swine, &c., which have the hoof divided. Owen's term for animals such as the tapir.

Mundic, (mun'dik)=Pyrites, *q.v.* A mineral of the iron group, chiefly disulphide of iron. *White M.*=Mispickel, *q.v.*

Muntjac, (munt'jak)=Cervulus vaginalis: a variety of the deer; also called ribbed-face deer.

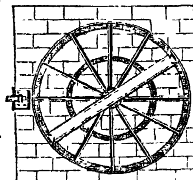
Muntz's metal. A variety of brass: an alloy of copper and zinc, used for sheathing ships; named after the inventor.

Muræna, (mū-rē'na). [The Latin name.]= Eel, *q v.*

Murænidæ, (mū-rē'ni-dē). [Muræna, *q v.*; Gk. *eidos,* form.]=Eels: a family of fishes belonging to Apoda; a division of Malacopterygii.

Murænoidæ, (mu-rē-noi'dē). [Muræna, *q.v.*; Gk. *eidos,* form] Gunnel-fish, &c.: fishes belonging to Gobiidæ.

Mural, (mū'ral). [L. *murus,* wall.] *M. circle:* a graduated circle (or portion of a circle), fixed on a wall, and used to measure arcs of the meridian. *M. quadrant:* also called Tychonic quadrant.


Mural circle.

Murchisonia, (mer-chi-sō'nia). [Sir R. Murchison.] A gasteropodous mollusc, found in Devonian rocks.

Murchisonite, (mer'chis-o-nīt). [Sir R. Murchison] A variety of Orthoclase, *q.v.*

Murderer liana=Murderer lipo: a parasitic climbing plant, which kills the tree it clings to, by enclosing it with a number of branches; found in Brazil.

Murex, (mū'reks). [L. *murex,* purple fish] *M. trunculus:* a molluscous animal found in the Mediterranean, and used for a rich purple dye.

Murexan, (mū-reks'an). [Murexid. *q.v.*]= Purpuric acid, *q.v.*, obtained from Murexide.

Murexid, (mū-reks'id). [Murex, *q.v.*] $2C_8H_8N_6O_6$=Purpurate of ammonium: obtained from uric acid, &c., and used as a purple dye.

Muriate, (mū'ri-āt). [Muriatic, *q v.*] Salts of muriatic acid. *M. of ammonia* = Salammoniac=Chloride of ammonium. *M. of salt*=Common salt.

Muriatic acid, (mū-ri-at'ik). [L. *muria,* brine] =Hydrochloric acid, *q.v.*

Muridæ, (mū'ri-dē). [Mus, *q.v.*; Gk. *eidos,* form.] Rats, mice, jerboas, &c.: a family of animals belonging to Rodentia.

Muromontite, (mū-rō-mon'tīt). [The Latin name of Mauersburg] A black amorphous mineral, chiefly silicate of yttrium, iron, &c.

Mus, (mus). [The Latin name.] A small animal, the type of Muridæ, remarkable for its fecundity and destructiveness to vegetation. *M. alpinus*=Marmot of Alps. *M. glis*=Dormouse. *M. rattus*=Rat. *M. amphibius* = Water-rat *M. sagitta* = Jerboa. *M. bursarius* = Canada rat. *M. lemmus* = Lemming. *M. musculus*=Mouse. *M. sylvaticus*=Wood-mouse. *M. cricetus* = Hamster. *M. Labradorius*=Gerbil. *M. giganteus* =Great rat of India.

Musa. [Latin name, from Egyptian *mauz*.] Plantain, banana, &c.: an herbaceous endogenous plant, chiefly found in Asia *M. sapientum*=Banana. *M. textilis*=Manilla hemp.

Musaceæ, (mū-sā'se-ē). [Musa, *q.v.*]=Musads: plantains, bananas, &c.: stemless plants, with large sheathing leaves, belonging to Amomales.

Musang=Vivorra musanga: an animal of the civet kind found in Borneo

Musca, (mus'ka). [The Latin name.] Fly: an insect belonging to Diptera. *M. chloris* =Green bottle: a green fly. *M. carnaria*= Flesh-fly. *M. domestica*=House-fly.

Musca borealis, (mus'ka bō-re-ā'lis). [The Latin name.]=The northern fly. a northern constellation of small stars only.

Muscales, (mus-kā'lēz). [Musci, *q.v.*] Mosses: a division of Acrogens divided into Hepaticæ and Musci, *q.v.*

Muscardine, (mus'kār-dīn). [The French name.] A disease of the silkworm caused by a fungus=Botrytis bassiana, *q.v.*

Muscari, (mus'ka-ri). [Musk, *q.v.*]=Grape hyacinth. a plant, with blue flowers, belonging to Liliaceæ.

Muschelkalk, (mōsh'el-kålk). [Gk. *muschel*, mussel, *kalk*, chalk.]=Middle Trias: a limestone rock, not found in England, with numerous shells.

Muschelkalk, (mōsh'el-kålk). [Gk. *muschel*, mussel; *kalk*, chalk.] = Shell limestone = Middle Trias: not in England, but found in Germany, near the Black Forest: has numerous fossil shells.

Musci, (mus'si). [L. *muscus*, moss.] Mosses, *q.v*: small plants belonging to Muscales.

Muscicapa, (mus-sik'a-pa). [L. *musca*, fly; *capio*, I seize.]=Fly-catchers: small sparrow-like birds, found in Himalayas, belonging to Insessores.

Muscicapidæ, (mus-si-kā'pi-dē). [Muscicapa, *q.v.*] A family of insectivorous birds belonging to Dentirostres.

Muscineæ, (mus-sin'e-ē). [Musci, *q.v.*]=Hepaticæ and Mosses=Muscales, *q.v.*, have alternation of generations.

Muscle, (mus'l). [*Musculus*, the Latin word.] The lean of meat. *v.* Muscles.

Muscles, (mus'slz). [Muscle, *q.v.*] Bundles of fibres, which can be shortened at will, so as to move the parts which they connect nearer to each other: connected by tendons with the bones. *Extensor M.:* used to separate bones; to extend the arm, leg, &c. *Flexor M.:* used to draw bones together: to draw the arm, leg, &c., towards the axis. *Rotatory M.:* used to move bones in a circle.

Muscle animals. Oken's term for reptiles.

Muscovite, (mus'kō-vit). [Moscow in Russia.] =Potash mica: an elastic mineral of the mica group, found in quartz rocks; a silicate of alumina, potash, &c., common in Siberia, also called Muscovy glass.

Muscular, (mus'kū-lar). [Muscle, *q.v.*] Related to the muscles.

Muscular tissue. 1. Striated M. of voluntary muscles. 2. Non-striated. 3. M. of invertebrate animals. 4. Sarcode=Protoplasm.

Mushroom, (mush'rōm). [*Mousseron*, the French name.]=Agaricus: an edible fungus belonging to Hymenomycetes. *Root fibres of M* =Mycelium. *Stem and cap of M* =Hymenophore. *Under surface of cap of M.*=Hymenium. which bears the spores.


Mushroom.

Music, (mū'zik). [*Musica*, the Latin word.] Regular and continuous sounds having more than 16 vibrations per second, and fewer than 4000: a range of about 11 octaves.

Musical scale. A series of notes connecting any given note with its octave.

Musk, (musk). [*Musc*, the French word.] An odoriferous resin in the bag of male Moschus, *q.v.* *Musk duck*: a New Zealand duck having the odour of musk. *M. orchis* = Herminium monorchis. *M. rat*= Ondatra.


Musk-deer.

Musk-deer = Moschus moschiferus.

Musk-ox = Ovibos moschatus: found fossil in the Thames valley.

Musk-root=1. Radix sumbul. 2. A plant of Guiana, with long leaves, large yellow flowers, and fragrant seeds. *M. oil:* from the seeds.


Musk-ox

Musket, (mus'ket). [*Mosquet*, the French word.] A gun, for the discharge of bullets, having a smooth bore. *cf.* Rifled.

Muslin, (muz'lin) [*Mousseline*, the French word.] A light textile fabric made of cotton.

Musophaga, (mu-sof'a-ga). [Musa, *q.v.*; Gk.

phago, I eat.] Plantain-eater: a climbing bird belonging to Insessores.
Musquash, (musk'wash). [Indian name.]= Ondatra=Fiber zibethicus; also called Musk-rat and Musk-beaver.
Musquito=Mosquito, *q v*.
Mussel, (mus'el). [L. *musculus*, a little mouse.] A bivalve molluscous animal=Mytilus, *q.v.*
Mussels=Mytilidæ, *q v*.
Mussite, (mus'sit). [Mussa Alps] 1.=Diopside = White augite. 2. = Parisite. 3. A variety of Amphibole. 4. A variety of Andalusite.
Must, (must). [L. *mustus*, new.]=Juice of grapes, apples, &c., before fermentation
Mustang, (mŏs'tang). [The local name] A small, strong variety of the horse, found on the prairies of N. America.
Mustard, (mus'tard) [L. *mustum ardens*, hot must.] *Common M.* = Sinapis nigra. *Black M.*=Brassica nigra. *Garlic M* =Sisymbrium alliaria. *Hedge M.*=Sisymbrium. *Mithridate M.*= Thlaspi arvense. *Treacle M.* = Erysimum. *White M* = Brassica alba =Sinapis alba, *q v*. *Oil of M.*: 1. Fixed. 2. Volatile.
Mustela, (mus-tē'la). [The Latin name]= Otter: a burrowing nocturnal quadruped, with long body and short feet *M. martes*= Marten *M. lutra*=Otter. *M Pennantii*= Black cat = Pecan. *M vulgaris* = Weasel *M. erminea*=Ermine. *M. putorius*=Pole-cat =Foumart. *M. furo*=Ferret. *M. barbara* =Grison.
Mustelidæ, (mus-tē'li-dē). [Mustela, *q.v.*, Gk. *eidos*, form.] Weasels, otter, &c : a family of carnivorous animals belonging to Digitigrada.
Mute. *M. swan*=Cygnus olor.
Muzzle, (muz'l). [Museau.] The open end of a gun, *q.v.*
Mycelium, (mī-sē'li-um). [Gk. *mykes*, mushroom] = Spawn: small tubes forming the basis of a fungus.
Mycetes, (mī-sē'tēz). [Gk. *myketes*, bellower.] = Alouettes=Howling monkeys American monkeys, mostly of large size, with strong voices
Mycoderma, (mī-kō-der'ma). [Gk. *mykes*, mushroom; *derma*, skin]=Torvulæ: a fungus, belonging to Bacteria, which is able to absorb oxygen from the atmosphere. *M. aceti:* necessary for the production of vinegar by causing the formation of acetic acid from alcohol. *M. cerevisiæ:* a pellucid fungus formed on the surface of beer. *M. vini:* causes the fermentation of wine.
Mycology, (mī-kol'o-ji) [Gk *mykes*, fungus, *logos*, discourse.]=Fungology: the science of fungi, their nature and classification.
Mycomelic acid. $C_4H_4N_4O_2$=Alloxanamide: a monobasic acid.
Myconius, (mī-kō'ni-us). [Classical.] In Moon, *q v*.
Mycose, (mī'kōs). [Gk. *mykes*, fungus.]= Trehalose = $C_{12}H_{12}O_{11},H_2O$: a crystalline substance obtained from ergot of rye.
Mycteria, (mik-tē'ri-a) = Jabirus : a large wading bird belonging to Grallatores.
Myelencephala, (mī-el-en-sef'a-la). [Myelon and Encephalon, *q v.*] Owen's term for Vertebrata.
Myelencephalous, (mī-el-en-sef'a-lus). [Myelencephala, *q.v.*] Related to the spinal cord or brain.
Myelon, (mī'e-lon). [Gk. *myelos*, brain.]= Chorda spinalis: Owen's term for spinal cord.
Myeloneura, (mī-el-on-ū'ra). [Gk. *myelon*, marrow, *neuron*, nerve.] A primary division of animals made by Ehrenberg, and including Mammalia (without man), Birds, Amphibia, and Fishes
Mygale, (mig'āl). [Gk. *mygale*, field mouse] 1 =Crab-spider: a hairy spider of Brazil 2 inches long. 2. = Russian musk-rat = Desman.
Myliobatis, (mī-li-ō-bā'tis). [Gk *myle*, mill, *batis*, ray.]=Eagle-ray: a fish belonging to Batides, *q.v.*, named from the flat grinding teeth
Mylocaryum, (mī-lō-kā'ri-um) [Gk. *myle*, mill; *karyon*, nut.]=Buck-wheat tree.
Mylodon, (mī'lō-don). [Gk. *myle*, mill; *odous*, tooth] A large edentate animal, known only by fossil remains, chiefly jaw-bones, found in S American pleistocene rocks named from the flat teeth, adapted to grinding food.
Myodes=Lemming, *q v*.
Myology, (mī-ol'o-ji) [Gk. *mys*, muscle; *logos*, discourse.] The science of the nature and classification of muscles.
Myoporaceæ, (mī-ō-por-ā'se-ē). [Gk. *myo*, I shut, *poros*, pore] = Myoporads : shrubs, chiefly tropical, between Echiales and Bignoniales
Myoptic, (mī-op'tik). [Myopy, *q v.*]=Short-sighted.
Myopy, (mī'ō-pi). [Gk. *myo*, I shut: *ops*, eye] =Short-sight: when the focus of the eye is nearer than usual, and only objects near it are distinctly seen.
Myosotis, (mī-o-sō'tis). [Gk. *mys*, mouse, *otos*, ear]=Scorpion grass: an herb, with small flowers, belonging to Boraginaceæ, named from the shape of the leaves. *M. palustris* =Forget-me-not.
Myosurus, (mī-o-sū'rus). [Gk *mys*, mouse: *oura*, tail.]=Mouse-tail: a small herb belonging to Ranunculaceæ.
Myoxus, (mi-oks'us) [Gk. *mys*, mouse]= Dormouse: a small, nocturnal, burrowing, herbivorous quadruped.
Myria=10,000.
Myriagram=10,000 grams.
Myriametre=10,000 metres.
Myriapoda, (mi-ri-ap'o-da). [Gk. *myrioi*, ten thousand, *pous*, foot] = Centipedes and Millipedes, &c : articulate animals having very numerous feet, the body having more than twenty somites, belonging to Arthropoda: intermediate between red-blooded worms and insects: worms modified for terrestrial life.
Myrica, (mī-ri'ka). [The Greek name.]= =Sweet-gale=Bog-myrtle: a shrub belonging to Myricaceæ; also called candleberry tree and Dutch myrtle. *M. cerifera*=Wax

myrtle. *M. tallow*=Myrtle wax. a green, brittle solid from Myrica.

Myricaceæ, (mī-ri-kā'se-ē). [Myrica, *q.v.*]= Gale-worts: shrubs and trees belonging to Amentales.

Myricin, (mi'ri-sin). [Myrica, *q.v.*]=Melissyl palmitate: the chief constituent of bees'-wax.

Myrine=Gastrobranchus, *q.v.*

Myriophyllum, (mi-ri-ō-fil'lum). [Gk. *myrios*, myriad; *phyllon*, leaf.]=Water-milfoil: an aquatic herb, belonging to Haloragaceæ, named from its leaves being very numerous.

Myristic acid, (mi-ris'tik). [Gk. *myristikos*, sweet-smelling.]=$C_{14}H_{28}O_2$: from cocoa-nut oil, butter, &c., in white scales. *M. alcohol* =Methal.

Myristica, (mi-ris'ti-ka) [Gk. *myristikos*, sweet-smelling.]=Nutmeg tree: the type of Myristicaceæ, *q v. Aril of M. moschata*= Mace, *v.* Nutmeg.

Myristicaceæ, (mi-ris-ti-kā'se-ē). [Myristica, *q v.*]=Nutmegs: tropical trees, with leathery leaves and very small flowers, belonging to Menispermales.

Myristicin, (mi-ris'ti-sin). [Myristica, *q.v.*]= $C_{10}H_{16}$: volatile oil of nutmeg.

Myrmecobius, (mer-me-kō'bi-us). [Gk. *myrmex*, ant; *bios*, food.] A small insectivorous quadruped, belonging to Marsupialia, found in Australia.

Myrmecophaga, (mer-me-kof'a-ga). [Gk. *myrmex*, ant; *phago*, I eat.]=Ant-eater: an animal, with long snout, but no teeth: belongs to Edentata. *M. aculeata*=Echidna =New Zealand porcupine. *M. jubata*= Great ant-eater.

Myrmeleon, (mer-mē'le-on). [Gk. *myrmex*, ant; *leon*, lion.] A large insect belonging to Neuroptera. The larva makes a pit for the capture of ants and other insects. *M. formicarius*=Lion-ant.

Myrobalans, (mī-rob'a-lanz). [Gk. *myron*, ointment, *balanos*, nut.] 1.=Combretaceæ, *q.v.* 2. Fruits of several species of Terminalia; trees belonging to Combretaceæ.

Myronic acid, (mi-ron'ik). [Gk. *myron*, ointment.] $C_{10}H_{19}NS_2O_{10}$: found in black mustard.

Myrospermum, (mī-ros-per'mum). [Gk. *myron*, ointment; *sperma*, seed.] A tree belonging to Amyridaceæ, the stem of which yields a balsam. *M. Peruiferum*=Balm of Peru.

Myrrh, (mer). [*Myrrha*, the Latin name.] A gum resin obtained from Balsamodendron myrrha.


Myrrh.

Myrrhis, (mer-ris). [Gk. *myrrha*, fragrant.]= Cicely: an herb belonging to Apiaceæ. *M. odorata* = Sweet Cicely =Sweet chervil.

Myrsinaceæ, (mer-sin-ā'se-ē). [Gk. *myrsine*, myrtle.]=Ardisiads: shrubs and trees, with leathery leaves, small flowers, and fleshy fruits, belonging to Cortusales.

Myrtaceæ, (mer-tā'se-ē). [Myrtus, *q v.*]= Myrtle blooms: shrubs and trees, found in hot climates, belonging to Myrtales.

Myrtales, (mer-tā'lēz). [Myrtle, *q.v.*] Plants, of which the myrtle is the type, forming a division of Epigynous Exogens.

Myrtle, (mer-tl). [*Myrton*, the Greek name.] =Myrtus: a shrub, the type of Myrtaceæ. *M. blooms*=Myrtaceæ. *Wax M.*=Myrica.

Mysorin, (mī-sō'rin). [Mysore.] A black massive mineral; a mixture of carbonate of copper, oxide of iron, and silica.

Mytilidæ, (mī-til'i-dē). [Mytilus, *q.v.*] A family of molluscous animals belonging to Lamellibranchiata, including the mussel.

Mytilus, (mī'ti-lus). [L. *mytilus*, mussel.]= Mussel: a bivalve mollusc, the type of Mytilidæ, used as food.

Myxine, (miks-ī'ne). [Gk. *myxa*, mucus.] Hag-fish: an eel-shaped fish, of low organization, belonging to Marsipobranchii, *M. glutinosa*: hag-fish.

Myxinidæ, (miks-ī'ni-dē). [Gk. *myxa*, gluten.] Myxinoid fishes=Hags: eel-like fishes, with sucker-like mouths, often found in larger fishes.

Myxogastres, (miks-ō-gas'trēz). [Gk. *myxa*, gluten.] Fungi, allied to puff-balls, belonging to Gastromycetes, once supposed to be animals. When young, minute and gelatinous, when old, produce spores.

Myxomycetes, (miks-ō-mī-sē'tēz). [Gk. *myxa*, gluten; *mykes*, fungus.] Plants differing from all other plants, but approaching nearest to Fungi. They do not form cells or tissue, the protoplasm remaining free in masses. They live on decaying vegetable substances.

N.

N.P.D. Abbreviation North Polar Distance.

N.Z. Abbreviation of North Zone.

Nacre, (nā'kr). [The French word.]=Mother-of-pearl, *q.v.*

Nacreous, (nā'kre-us). [Nacre, *q.v.*]=Pearly. *v.* Mother-of-pearl.

Nacrite, (nā'krit). [Nacre, *q.v.*] A pearly mineral, chiefly silicate of aluminum, occurring in small grains or scales; a variety of Muscovite.

Nadir, (nā'der). [Arab. *nadhir*, opposite.] The point of the heavens directly beneath our feet. *cf.* Zenith.

Nagas. An Asiatic people.

Nagelflue, (nā'gel-flō). [Gk. *nagel*, nail; *fluge*, number.] A conglomerate rock found in Switzerland, also called nail-stone, from the number of pebbles resembling nail-heads.

Nagyagite, (nag'i-a-jit). [Nagyag, a town.] An opaque, lustrous mineral, chiefly native

telluride of lead, &c.: also called tellurium glance

Naia=Naja, *q v.*

Naiadæ, (nā'ya-dē). [Gk. *Nais*, water nymph]. 1. A family of freshwater bivalve molluscous animals; also called freshwater mussels.

Naiadaceæ, (nā-ya-dā'se-ē). [Naias, *q v.*]= Naiads: aquatic plants, with fleshy leaves and small flowers, belonging to Hydrales; also called Fluviales.

Naiadeæ, (nā'ya-de-ē). [Naias, *q.v.*] Submerged plants with slender branches and long leaves *v.* Naiadaceæ.

Naias, (nā'yas). [Gk *nais*, water-nymph.] A plant, the type of Naiadaceæ.

Naididæ, (nā'ya-di-dē). [Gk. *nais*, water-nymph.] = Water-worms: hermaphrodite worm-like animals, belonging to Annelida.

Nails, (nālz). [*Nagel*, the A.-S. word.] Horny modifications of the epidermis, covering the ends of the fingers and toes. *v.* Horn. In man, flat, in the horse and ox, a hoof; in cats and birds, sharp claws; in sea-bear, very small, in porpoise, absent. In the pangolin, the whole body is covered with nails. *N. fungus.*= Agaricus esculentus: a minute fungus.

Naja, (na'ya). A venomous snake belonging to Crotalidæ. *N. tripudians*· cobra di capello; also called spectacle-snake, and hooded-snake.

Naked. *N. bees*=Denudata=Nomada: have no apparatus for getting pollen, parasitic; also called wasp-bees and cuckoo-bees. *N. eyed medusæ* = Craspedote: mostly small and phosphorescent; like little glass bulbs. *v.* Medusæ.

Nankin, (nan-kēn'). [N. in China.] A cotton cloth of a dark yellow colour, named from being first made at N.; also called nankeen.

Naphtha, (naf'tha; also nap'tha). [The Greek name] A general name for a number of liquid hydrocarbons (much used for purposes of heat and light); especially for those which issue from the earth. *v.* Hydrocarbons. *Boghead N.*=Photogen. *Bone N.:* from bone oil. *Coal N.*: from coal tar. *Mineral N.*=Rock-oil: from petroleum. *Native N.* = Petroleum. *Wood N.*: from distillation of wood. *Shale N.*: from shale. *N. springs:* in America and on shores of Caspian Sea.

Naphthalene, (naf'the-lēn). [Naphtha, *q.v.*] =Naphthalin, *q v.*

Naphthalin, (naf'tha-lin). [Naphtha, *q.v.*] 1.=$C_{10}H_8$: a white crystalline inflammable substance obtained from coal-tar, from which the nitrogenous bases, naphthylia and dinaphthylia, are obtained by the action of ammonia. 2.=Scheererite.

Naphthol, (naf'thol). [*Naphthyl alcohol.*] $C_{10}H_8O$=Naphthyl alcohol.

Naphthyl, (naf'thil). [Naphtha, *q.v.*; Gk. *hyle*, material.] $C_{20}H_{14}$: the base of Naphthalene; the radicle of Naphthylia. *N. alcohol*=Naphthol. *N. ethers*=*N. acetate; N. benzoate*, &c.

Naphthylia, (naf-thil'i-a). [Naphthyl, *q.v.*]= Naphthylamine=$C_{10}H_9N$: an organic base; a crystallisable hydrocarbon obtained from coal-tar.

Naples. *N. yellow* = Antimoniate of lead: used as a pigment

Napoleonite, (na-pō'le-o-nīt). [Napoleon I.] A mineral found in Corsica; felspar and hornblende arranged concentrically round granite nodules, also called orbicular greenstone. *v.* Orthoclase.

Napoleon-worts=Belvisiaceæ, *q.v.*

Narceia, (nār'se-a). [Gk. *narke*, stupor.]= Narceine: one of the natural bases found in opium, crystallising in silky needles.

Narcissales, (nār-sis-sā'lēz). [Narcissus, *q.v*] Plants, with petaloid flowers and albuminous seeds: forming a division of Endogens.

Narcissus, (nar-sis'us). [Gk. *narke*, stupor.] =Daffodil, Lent Lily, &c.: an herb with large white or yellow flowers. *N. pseudo-narcissus* = Lent lily= Camel's neck: belonging to Amaryllidaceæ.


Narcissus.

Narcotics, (nar-kot'iks). [Gk. *narkotikos*, stupefying.] Substances, chiefly used as medicines, which induce sleep.

Narcotic acid. Hydrated Narcotine.

Narcotine, (nār'kō-tin) Gk. *narke*, stupor]=$C_{22}H_{23}NO_7$ one of the natural crystalline bases found in opium, poisonous.

Narcotism, (nār'kot-izm). [Gk. *narke*, stupor.] A retardation of the circulation.

Nardostachys, (nār-dos'ta-kis). [Gk. *nardos*, spikenard, *stachys*, ear of corn]=Spikenard, an herb, belonging to Valerianaceæ, yielding the odorous ointment called spikenard.

Nardus, (nar-dus). [Gk. *nardos*, spikenard.] =Mat-weed: a plant belonging to Graminaceæ, also called mat-grass.

Nares=Nostrils, openings between the mouth and nose.

Narrow. *N. gauge*· used of a railway that has 4 ft. 8½ inches between the rails. *cf.* Broad-guage.

Narthecium, (nār-thē'si-um). [Gk. *narthex*, a reed.] Bog-asphodel: an herb belonging to Liliaceæ.

Narwal=Narwhal.

Narwhal, (nar'whal). [*Nahvalr*, the Icelandic name.] = Monodon monoceras: a cetacean animal belonging to Delphinidæ.


Narwhal.

Nasal, (nā'zal). [L. *nasus*, the nose.]
N. vertebræ—
N. Centrum=Vomer.
Neurapophyses=Perfontal.
Spine=Nasal.

Nascent, (nā'sent). [L. *nascor*, I am born.] *N state* of chemical elements when just liberated from combination.

Nasturtium, (nas-ter'shi-um). [L. *nasus*, nose; *tortus*, twisted.]=Watercress: an herb, with

small yellow flower, belonging to Brassicaceæ.

Nasua, (nā'su-a). [L. *nasus,* nose.]=Coati: a small bear-like animal, belonging to Carnivora.

Natatores, (nā-ta-tō'rēz). [L. *nato,* I swim.] Swimming-birds: aquatic, polygamous birds, with short legs, webbed toes, and thick feathers; ducks, geese, gulls, &c.; classified as Brevipennatæ, Longipennatæ, and Lamellirostrēs.

Native. *N. magnesia*=Brucite. *N. mercury* =Quicksilver

Native minerals, uncombined with other substances.

Gold group—
- Gold.
- Silver.

Iron group—
- Platinum.
- Quicksilver.
- Lead.
- Zinc.
- Mercury, &c.

Tin.

Arsenic group—
- Arsenic.
- Antimony.
- Bismuth.

Sulphur group—
- Sulphur.
- Tellurium.

Carbon group—
- Carbon.
- Diamond, &c.

Natrix, (nā'triks). [L. *natrix,* water-snake] A snake belonging to Colubridæ. *N. torquata*=Common snake=Coluber natrix.

Natrium, (nā'tri-um). [The Latin name.]= Sodium, *q.v.*

Natrocalcite, (nā-trō-kal'sīt). [Natron and Calcite, *q.v.*] A mineral, chiefly carbonate of calcium, named from being supposed to contain soda.

Natrolite, (nā'trō-līt). [Natron, *q.v.*; Gk. *lithos,* stone.] 1.=Mesotype: a mineral of the zeolite group; a silicate of aluminum and sodium, found in veins of basalt and trachyte rocks. *v.* Fusibility. 2. Ekebergite.

Natron, (nā'tron). [*Natrum,* the Latin word.] A white mineral, chiefly carbonate of sodium. *N. alum*=Mendozite. *N. saltpetre*=Soda-nitre.

Natural, (nat'ū-ral). [Nature, *q v.*] *N. bases:* naturally formed substances having the properties of bases *N. classification of plants and animals: v.* Botanical systems and Zoology. *N. fats, v.* Fats. *N. magnet*=Loadstone, *q v.* *N. philosophy, v.* Physics. *N. projection, v.* Projection. *N. selection:* the term used by Darwin to express the survival of those animals best fitted to live under any given set of conditions=The "survival of the fittest" of Herbert Spencer.

Nature-printing. A process by which figures of plants, lace, &c., are reproduced upon paper from impressions made upon plates of metal from the objects being pressed closely upon them.

Naucrates, (naw'kra-tēz). A fish of the mackerel kind. *N. ductor*=Pilot-fish.

Naumannite, (naw'ma-nit). [Prof. Naumann.] A black mineral, chiefly native sulphide or selenide of silver.

Naupliiform, (naw'pli-i-form). [Nauplius, *q.v.*] Having the form of a Nauplius, *q.v.*

Nauplius, (naw'pli-us). L. *nauplius,* a molluscous animal.] An unsegmented ovate larva: the early stage of a crustacean, afterwards becomes a zoea, *q.v.*

Nautical, (naw'ti-kal). [L. *nauticus,* relating to a sailor). *N. almanack* contains data for navigation of ships, &c.: is issued four years in advance. *N. day:* from midnight to midnight.

Nautilus, (naw'ti-lus). [The Latin name.] A marine cephalopod, belonging to Tetra-branchiata. *Paper N.*= Argonauta: the shell is secreted by the foot, and found only in the female. *Pearly N* =Nautilus pompilius: having a shell secreted by the body.


Nautilus

Nautilidæ, (naw-til'i-dē). [Nautilus, *q.v.*; Gk. *eidos,* form] A family of molluscous animals, belonging to Cephalopoda.

Nave, (nāv). [*Nafu,* the A.-S. word.] The portion of a church between the western doorway and the transept or choir.

Navel-wort, (nā'vel-wurt). Cotyledon: an herb belonging to Crassulaceæ.

Naviculare, (nā-vik-u-lā're). [L. *navicula,* a little skiff] A bone in the foot, articulating with the astragalus.

Navigation, (nav-i-gā'shun). (L *navis,* ship; *ago,* I direct.] The art of guiding the course of a ship *Celo-N* =N. with reference to sun, stars, &c. *Geo-N.*=Coasting=N. with reference to land.

Naya=Naja, *q.v.*

Neanderthal, (ne-an'der-tal). *N skull:* a fossil human skull, found at N., near Dusseldorf, 8 inches long, 5¾ wide, with low forehead, intermediate between the European and chimpanzee types.

Neap-tides, (nēp). [A.-S. *neafte,* scarcity] Low tides: when sun and moon are in opposition. *cf.* Spring-tides.

Nebalia, (ne-bā'li-a). The only marine genus of Phyllopoda, *q.v.*; the larvæ have zoea stages and are also naupliiform.

Nebulæ. Of two kinds: 1. Resolvable into stars by telescopic power. 2. Probably not clusters of stars, but luminous gaseous matter. *Chief N.*: in Orion, Argo Navis, Perseus, Andromeda, &c.

Nebulous stars. Stars having nebulæ surrounding them, as ι Orionis and others.

Necronite, (nek'rō-nīt). A variety of Orthoclase.

Necrophaga, (nek-rof'a-ga). [Gk. *nekros,* dead; *phago,* I eat.] Carrion-eaters. a general term for any animals which devour carrion, used especially as=Clavicornes, a sub-division of Coleoptera.

Necrophorus, (nek-rof'o-rus). [Gk. *nekros*, dead, *phoreo*, I carry.] Burying-beetle: a beetle which buries the bodies of small birds and other animals, in which their eggs are laid

Necrosis, (nek-rō'sis). [Gk. *nekros*, dead] Mortification of bone. *cf.* Gangrene. *v.* Mortification.

Nectandra, (nek-tan'dra). A plant belonging to Lauraceæ.

Nectaries, (nek'ta-riz). [Nectar, *q v.*] Glands, in plants, secreting odoriferous juices, usually sweet.

Nectar, (nek'tar). [Gk. *nektar*, honey] Sugary juices secreted by flowers.

Nectarine, (nek'ta-rēn). [Gk. *nektar*, honey.] Persica lævis=Amygdalus Persica, a variety of the peach.

Nectarinidæ, (nek-ta-rin'i-dē). [Nectarinia, the typical genus] Sugar-suckers. birds belonging to Tenuirostres, *q v.*

Nectary. Singular of Nectaries, *q v.*

Necto-calycine, (nek-to-kal'i-sin). Relating to a necto-calyx.

Nectocalyx, (nek-tō-kal'iks.) [Gk. *necho*, I swim; *kalyx*, cup.] The swimming apparatus of marine Hydrozoa

Necto-sac, (nek'tō-sak). The concave portion of a necto-calyx, when bell-shaped.

Needle, (nē'dl). [*Nædl*, the A -S word] A magnetised bar or rod of steel, which points towards the magnetic poles when free to move horizontally. *Asiatic N* a compound needle, consisting of two magnetic needles pointing in opposite directions; it remains in any direction while preserving its other magnetic properties. *Dipping N* v. Dipping. *N furze:* Genista Anglica. *N gun:* a rifle fired by a needle being forced into the cartridge. *N. ore:* an ore, bismuth sulphur and copper, &c. *N spar:* a variety of Arragonite. *N stone* = Natrolite, also called Needle-zeolite. *N. whin*=Genista

Negative, (neg'a-tiv). [L *nego*, I deny.] *N. electricity*=Resinous electricity: developed by friction on resinous substances. *N quantities*, in mathematics. measurement of quantities or distances which are the reverse of positive quantities. *N. radicles*= Chlorous radicles *v.* Radicle. *N. in photography;* a portrait or view taken on a thick coating of collodion, or other sensitive substance, so that the dark portions are opaque to sunlight; and, therefore, copies may be printed by the action of the sun through the transparent part.

Negritoes. An Oceanic race.

Negro, (nō'gro). [L *niger*, black] 1. The Spanish name for Papuans. 2. A native of Central Africa. *N. monkey*=Simia maura

Negroes. An African people. *v.* Negro.

Negundo, (ne-gun'do)=Box-elder=Acer negundo: a variety of the maple tree.

Nelumbiaceæ,(ne-lum-bi-ā'se-ē) [Nelumbium, *q.v*]=Water-beans: aquatic, floating herbs, with peltate leaves, belonging to Nymphales

Nelumbium, (ne-lum'bi-um). [Corruption of the Singalese name] The type of Nelumbiaceæ. *N. speciosum*=Pythagorean bean: a plant, with large fan-like leaves, floating on water, and tulip-like flowers; has edible roots and nuts.

Nemacanthus, (nem-a-kan'thus). [Gk. *nema*, thread; *akantha*, spine.] A placoid fish, known only by fossil spines, found in Lias rocks

Nemalite, (nem'a-līt) [Gk. *nema*, thread; *lithos*, stone.] A white silky mineral, chiefly hydrated silicate of magnesia, also called Brucite.

Nematelmia, (nem-a-tel'mi-a). [Gk. *nema*, thread, *helmins*, worm.] A division of Scolecida: cylindrical, elongated, worm-like animals, mostly unisexual and parasitic.

Nematelminthes, (nem-a-tel-min'thēs) [Gk. *nema*, thread, *helmins*, worm.] A subdivision of Annuloida by Rolleston.

Nematocysts, (nem'a-tō-sists). [Gk. *nema*, thread, *kistos*, bladder.]=Cnidæ: elastic sacs, each containing a long coiled serrated filament, which can be shot out to some distance, found in Cœlenterata; also in some Mollusca, &c.

Nematoda=Nematoidea, *q v.*

Nematoidea, (nem-a-toi'de-a). [Gk. *nema*, thread; *eidos*, form]=Nematodes=Threadworms, round worms, &c a division of Scolecida, with vermiform bodies, a division of Cœlelmintha. *q v.*, often parasitic and of two sexes.

Nematophores, (nem'a-tō-fōrz). [Gk. *nema*, thread. *phoreo*, I carry] Cup-like appendages to some of the Sertularida, in which thread-cells are contained

Nematosaurus,(nem-a-tō-saw'rus). [Gk. *nema*, thread, *saura*, lizard.] A reptile, known only by fossil remains.

Nemertida,(ne-mer'ti-da). [Gk. *nema*, thread.] =Ribbon-worms: elongated vermiform animals, with distinct sexes, belonging to Turbellaria.

Nemesis, (nem'e-sis). [Classical.] No. 128 of the Minor Planets.

Neocomian, (nē-ō-kō'mi-an). [L. *Neocomium*, Neufchatel.] = Lower Cretaceous = Lower Greensand. *v.* Cretaceous.

Neoctese=Scorodite, *q. v.*

Neolite, (nē'o-līt). [Gk *neos*, new; *lithos*, stone.] A silky fibrous mineral, chiefly hydrated silicate of magnesium, aluminum, and iron· named from being newly formed by infiltration of magnesium rocks.

Neolithic age, (nē-ō-lith'ik). [Gk. *neos*, new; *lithos*, stone] A pre-historic period, in which land and water were much as now; also called the polished stone age, when gold was the only metal known and used for ornament, tools and implements being of stone.

Neotokite, (ne-ot'ō-kīt). [Gk. *neotokos*, of recent origin.] A brown amorphous mineral, chiefly hydrated silicate of magnesium, iron, &c.

Neoplase=Botryogen: in part

Neottia, (ne-ot'ti-a). [Gk. *neottia*, nest.] Lady's tresses: a parasitic plant, belonging to Orchidaceæ, named from its root-fibres being matted together. *N. nidus-avis*= Bird's-nest orchis.

Neotype, (nē'ō-tīp). A variety of Calcite.
Neozoic, (nē-ō-zō'ik). [Gk. *neos*, new; *zoe*, life.] =Secondary and Tertiary: all rocks newer than Palæozoic. *cf.* Mezozoic and Cainozoic.
Nepenthaceæ, (ne-pen-thā'se-ē). [Nepenthes, the typical genus.]=Nepenths: swamp-herbs of E. India and China, with pitcher-shaped leaves, belonging to Euphorbiales, also called pitcher plants.
Nepeta, (nep'e-ta). [The Latin name.] An herb belonging to Lamiaceæ. *N. cataria*= Cat-mint. *N. glechoma*=Ground ivy.
Nephelite, (nef'e-līt). [Gk. *nephele*, cloudy.] =Nepheline: a mineral, chiefly silicate of aluminum, common in volcanic districts, named from having a cloudy appearance when acted on by an acid. Elæolite is a coarse, greasy variety of N.
Nephila, (nef'i-la). A large spider, found in tropical America, which builds a large and strong web.
Nephrite, (nef'rīt). [Gk. *nephros*, kidney.] 1.=Jade stone = Axe-stone: chiefly silicate of calcium, aluminum, and magnesium: found in pile-buildings of Swiss lakes. 2. A variety of Amphibole 3. Zoisite, *q.v.*
Nephritis, (ne-frī'tis). [Gk. *nephros*, kidney.] A disease of the kidneys.
Nephrodium, (nef-rō'di-um). [Gk. *nephros*, kidney.] A fern belonging to Polypodiaceæ. *N. filix-mas*=Male Fern.
Neptune, (nep'tūn). [Classical.] The most distant of the known planets, discovered in 1846, at a distance from the sun of about 2750 millions of miles: has a diameter of about 36,000 miles, and a year equal to about 170 of ours.
Neptune's cups=Spongia patera: large sponges found in Sumatran seas.
Neptunian, (nep-tū'ni-an). [L. *Neptune*, god of the sea.] *N. theory* of Geology: that the action of water had caused all geologic changes.
Nerium, (nē'ri-um). [Gk. *neros*, humid.] A poisonous plant, found in damp places, belonging to Apocynaceæ. *N. oleander*= Oleander.
Neroli, oil of. Oil of orange-flowers.
Nerve, (nerv). [*Nervus*, the Latin word.] A branch of the sensori-motor apparatus. *v.* Nerves.
Nerve animals. Oken's term for birds.
Nerves, (nervz). [Nerve, *q.v.*] The branches of the nervous system, or sensori-motor apparatus; the organs of sensation and motion.

1st pair of N.		=Olfactory nerves.
2nd	,,	=Optic nerves.
3rd	,,	=Motores oculi.
4th	,,	=Serve one of the muscles of the eye.
5th	,,	=Trigeminal nerves, serve the skin of the face and jaws.
6th	,,	=Facial nerves, serve one of the muscles of the eye.
7th	,,	=Facial nerves.
8th	,,	=Auditory nerves.
9th	,,	=Glossopharyngeal nerves.
10th	,,	=Pneumogastric nerves.
11th	,,	=Spinal accessory nerves.
12th	,,	=Nerves of the tongue.

Nervous, (ner'vus). [Nerve, *q.v.*] Relating to the nerves. *N. system:* brain, motor nerves, and sensory nerves, all derived from the ectoderm. *N. system of animal life*= Cerebrospinal system, *q v* *N. system of organic life* = Sympathetic system, *q.v.*= Ganglionic system. *N. tissue:* consists of nerve fibres and ganglionic corpuscles.
Nestor, (nes'tor). An extinct animal, belonging to Mammalia, remains of which are found in Australia.
Nests, (nests). [The A.-S. word.] *Closed N.:* of thrush, finch, pigeon, swift, fly-catcher, goat-sucker, &c. *Hanging N.:* of Icteridæ, of America. *Open N.:* of kingfishers, woodpecker, parrot, wren; all Scansores and nearly all Fissirostres have closed nests.
Nets, (nets). [*Nett*, the A.-S. name.] *Trammel:* a long net. *Seine:* a very large net. *Trawl:* a net extending for a considerable distance along a fishing ground.
Nettle, (net'tl). [*Netele*, the A.-S. name.]= Urtica: an herb having stinging hairs, the type of Urticaceæ. *Hemp N.* =Galeopsis, *q v.* *Dead N* =Lamium, *q.v.* *N. tree*=Celtis. *Stinging N.*=Urtica urens and V. dioica. *Roman N.*= Urtica pilulifera.


Nettle.

Nettle-worts=Urticaceæ *q.v.*
Neural, (nū'ral). [Gk. *neuron*, nerve.] Related to the nerves. *N. arch:* the posterior rings of the Vertebræ, enclosing the spinal cord. *N. canal*=*N. tube*, *q.v.* *N. flexure:* the bending of the alimentary canal towards the neural side of the body. *N. spine*=Neurapophysis: the hinder projection of a vertebra. *N. tube*= N. canal· contains the brain and spinal cord; in the upper and posterior portion of the body.
Neuralgia, (nū-ral'ji-a). [Gk. *neuron*, nerve; *algos*, pain.] Generally: a painful affection of the nerves. Specially: used of the nerves of the face.
Neurapophyses, (nū-ra-pof'i-sēz). [Gk. *neuron*, nerve; *pophysis*, process.] = Neural arches: bony processes of Vertebræ which form the neural canal and enclose the spinal cord.
Neurilemma, (nū-ri-lem'ma). [Gk. *neuron*, nerve; *lemma*, covering.] A terminal sheath of connective tissue enclosing the fibres &c., of the nerves.
Neurine, (nū'rīn). [Gk. *neuron*, nerve.]= $C_5H_{15}NO_2$: a base obtained from Protagon, *q.v.*; also called Choline.
Neurolite, (nū'rō-līt). A green, brittle mineral, chiefly silicate of aluminum; a variety of Agalmatolite.
Neuroptera, (nū-rop'ter-a). [Gk. *neuron*, nervure; *pteron*, wing.] Ant-lions, dragon-flies, May-flies, caddis-flies, termites: a primary division of insects, with four membraneous wings of equal size, supported by ribs, and having well-developed jaws.

Neuropteris, (nū-rop'tẹr-is). [Gk. *neuron*, nerve; *pteris*, fern.] A coal plant: fronds of tree ferns, found in carboniferous rocks.


Neuropteris.

Neurotomies, (nū-rot'ō miz). [Gk. *neuron*, nerve; *tome*, section.] Dissections of nerves.

Neutral, (nū'tral). [L. *neuter*, indifferent.]=*N. salts*=Normal salts, which are neither acid nor alkaline. *N. line:* in magnet, between the poles, where there is no magnetic power. *N. point:* of polarisation. *v.* Polarisation.

Névé, (ne've). [The French word.] Snow converted into glacier ice.

Newfoundland dog. A variety of the dog, of large size, originally found in Newfoundland.

Newkirkite, (nū-kẹr'kīt). [Newkirchen, in Alsace.]=Manganite: a mineral, chiefly hydrate of manganese.

New moon. When the moon has its dark side turned to us.

New red-sandstone. *v* Red-sandstone.

New style=Gregorian style. *v* Kalendar.

New Zealand flax=Phormium tenax, *q v.*

Newt, (nūt). [*Evet*, the O.-E. name.] *v* Newts.

Newton, (nū'ton). [Sir Isaac Newton.] One of the loftiest mountains in the moon; nearly five miles in height.

Newton's. *N. disc:* a circle, covered by coloured strips of paper, arranged in the order of the colours of the spectrum, which, when made to revolve rapidly, appears white. *N. rings:* a series of concentric rings, showing the colours of the spectrum, seen when a very thin layer is enclosed between two plates of glass, one convex and one plane, caused by interference of light. *N. theory of light:* that it is composed of seven primary lights, red, orange, yellow, green, blue, indigo, and violet.

Newtonian telescope. A reflecting telescope in which the image is reflected from a mirror and brought to the eyepiece at the side by means of a prism.

Newts, (nūts). [*Evets*, the O.-E. name.]= Water Salamanders: animals belonging to Urodela, *q.v.*


Newt.

Nicaragua wood=St. Martha's wood: a variety of Brazil wood.

Niccolite, (nik'ō-līt). [L. *Niccolum*, nickel.] = Kupfer-nickel: a red, opaque, brittle mineral of the nickel group, crystallising in hexagons, chiefly arseniate of nickel.

Niche, (nich). [The French word.] A recess adapted for a statue, &c.

Nickel, (nik'el). [Abbreviation of kupfer-nickel, the German name.]=Ni^{iv}: an iron-like metal: a white, hard, tenacious, brilliant metal, which is magnetic when cold. A constitutent of meteoric iron, and of German silver. *N. bloom*=N. green=Annabergite; also called N. ochre. *N. glance*=Arsenio-sulphide of N.=Gersdorffite: a native compound of nickel, sulphur, and arsenicum. *N. pyrites:* native sulphide of N. *N. silver* =German silver, *v.* Silver. *N. vitriol*=Morenosite. *Antimonial N.*=Breithauptite. *Arseniate of N.*=Annabergite. *Arsenical N.* =Niccolite. *Bismuth N.*=Grunanite. *Emerald N*=Zaratite. *Oxide of N.*=Bunsenite.

Nickeline, (nik'e-lin). [Nickel, *q.v.*]=Copper-nickel: an ore of nickel.

Nickelite, (nik'e-līt). [Nickel, *q.v.*]=Niccolite, *q v.*

Nicholson's hydrometer. Adapted to the estimation of the specific gravity of solid bodies. *v.* Hydrometer.

Nicobarians. An Oceanic race.

Nicol's prism, (nik'olz). [Professor Nichol, of Glasgow.] Composed of two pieces of Iceland spar cemented together by Canada balsam, it polarises light, and transmits only the extra-ordinary ray, the ordinary ray being totally reflected by the balsam.

Nicotia, (ni-kō'shi-a). [M. Nicot.]=Nicotylia, *q v.*

Nicotiana, (ni-kō-shi-ā'na). [M. Nicot.]= Tobacco: a plant belonging to Solanaceæ. *N. macrophylla*=Orinoco tobacco. *N. rustica*=Turkish tobacco=English tobacco. *N. tabacum*=Virginian tobacco: insectivorous.

Nicotianin, (ni-kō'shi-a-nin). [Nicotiana.] $C_{23}H_{32}N_2O_3$ = Essential oil of tobacco: a white crystalline substance obtained from tobacco; also called tobacco-camphor.

Nicotic acid, (nik'ō-tik). [Nicotiana, *q.v.*] $C_3H_4O_4$: a crystalline acid substance found in tobacco.

Nicotine, (nīk'ō-tin). [Nicotiana, *q.v.*]=Nicotia=Nicotylia, *q.v.*

Nicotyl, (nik'ō-til). [Nicotiana, *q.v.*]=$C_{10}H_{14}$: the hypothetical hydrocarbon in Nicotylia.

Nicotylia, (nik-o-tīl'i-a). [Nicotiana, *q.v.*]= $C_{10}H_{14}N_2$=Nicotine: a natural organic base, the active principle of the tobacco plant; one of the Nitrile bases; an oily inflammable liquid.

Nictitating membrane, (nik-ti-tā'ting). [L. *nicto*, I wink.] A third eyelid, found in birds: rudimentary in man.

Nidification, (nid-i-fi-kā'shun). [L. *nidus*, nest; *facio*, I make.] Nest building. *v.* Nests.

Nidulariacei, (nid-ū-la-ri-ā'se-ī). [L. *nidus*, nest.] Fungi, with coloured mycelium, cup-like peridia, and lentil-shaped sporangia, belonging to Gasteromycetes.

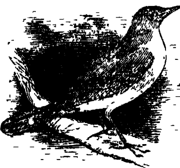
Niello, (ni-el'lō). [The Italian word.] A kind of engraving consisting of a design cut on metal and filled in with a black composition.

Nigella, (nī-jel'la). [L. *niger*, black.] A plant belonging to Ranunculaceæ, named from the colour of the seeds.

Nigger. Turnip fly, *q.v.*

Night. *N. ape*=Nyctipithecus. *N. hawk*= Chordeiles virgin. *N. heron*=Ardea nycticorax. *N. jar*=Caprimulgus Mahrattensis =Caprimulgus Europæus. also called fern-owl, goat-sucker, dorhawk, eve-jar, and churn-owl. *N. swallows*, *v.* Swallows

Nightingale, (nīt'ing-gāl). [*Nihtegale*, the A.-S. name.]=Motacilla luscinia = Philomela luscinia: a singing bird, also called thicket-warbler, heard in England from April to June, the males coming first. Not known in Wales, Cumberland, Ireland, or Scotland; nor in Brittany or Channel Islands.



Nightingale.

Nightshade, (nīt'shād)=Solanum: a poisonous plant; the type of Solanaceæ. *Deadly N.* = Atropa belladonna.



Nightshade

Nightshades, (nīt'shādz) =Solanaceæ, *q.v.*

Nile-mud, (nīl). [River Nile.] A compound of silica, alumina, peroxide of iron, and carbonate of lime; increases about 6 inches in a century.

Nilometer, (nī-lom'e-tėr). [River Nile; Gk. *metron*, measure.] An apparatus for the measurement of the height to which it rises in its periodical floods

Nimbus, (nim'bus). [The Latin word] 1.= Rain-cloud=cumulo-cirro-stratus. 2. In art =Halo: a ring of light round the head of a figure.

Ninth. In music, the interval equal to an octave and one note, or nine notes. *N. nerve* =Hypo-glossal nerve, passing from the medulla-oblongata to the tongue and larynx. In fishes counted as the first spinal nerve.

Niobates, (nī'ō-bāts). [Niobic, *q v.*] Compounds of niobic acid with bases.

Niobic, (nī'ō-bik). [Niobium, *q v.*] *N. oxide* =N. anhydride. *Hydrated N. oxide*=N. acid.

Niobite, (nī'ō-bīt). [Niobium, *q.v.*]=Columbite: a black mineral from which Niobium is obtained.

Niobium, (nī-ō'bi-um). [Niobe, daughter of Tantalus.]=Nb=Columbium: a rare metal found in Columbite, named from being supposed to be found in tantalite, *q.v.*

Nipples, (nip'lz). [*Nypele*, the A.-S word.] =teats: first developed in early marsupial animals, and transmitted to man.

Nipple-wort=Lapsana: a slender milky plant belonging to Asteraceæ.

Nispera, (nis'pe-ra)=Achras sapota: a Nicaraguan tree, with very durable timber, belonging to Sapotaceæ.

Nitella, (ni-tel'la). [L. *niteo*, I shine.] A plant belonging to Characeæ, *q v.*

Nit-grass=Agrostis Australis: a grass plant.

Nitracol, (nī'tra-kol). [Nitric, *q v.*] An acid liquid, obtained from acting on œnanthol by nitric acid.

Nitran, (nī'tran). [Nitrogen, *q.v.*]=Nitrion, *q.v.*

Nitraniline, (nī-tran'i-līn). [*Nitroxyl* and *Aniline*.] = $C_6H_6N_2O_2$ = Aniline in which nitroxyl replaces one atom of hydrogen.

Nitrates, (nī'trāts). [Nitric, *q.v.*] Compounds of nitric acid with bases. *Hydric N.*=Nitric acid. *Amyl N.*, *Ethyl N.*, &c. *v.* Nitric ethers. *Fused N. of silver*=Lunar caustic.

Nitratine, (nī'tra-tīn). [Nitrate, *q.v.*]=Nitratite, *q.v.*

Nitratite, (nī'tra-tīt) = $NaNO_3$ = Nitratine = Nitrate of sodium: a mineral, crystallising in hexagons, resembling nitre.

Nitre, (nī'tėr). 1 Nitrate of sodium. 2.= KNO_3=Nitrate of potash a mineral, usually in rhombic crystals, used in making gunpowder, glass, &c.; also called saltpetre. *Cubic N.* =Nitrate of soda.

Nitric acid = HNO_3=Hydric nitrate = Aqua fortis a colourless, fuming, highly corrosive liquid a powerful solvent.

Nitric anhydride=N_2O_5=Dinitric pentoxide: a colourless, crystalline substance.

Nitric ether. $(C_2H_5)NO_3$=Ethyl nitrate a colourless liquid, the vapour of which is inflammable.

Nitric oxide = NO = Nitrosyl: a colourless, neutral gas with an unpleasant odour.

Nitrides, (nī'trīdz) [Nitrogen, *q.v.*] Compounds of nitrogen with a metal, or with phosphorus, silicon, or boron, usually very unstable

Nitriles, (nī'trīlz). [Nitrogen, *q.v.*] 1. Term used for Hydrocyanic ethers. 2 =Amides: from which water has been removed. Ex. acetamide—H_2O=Acetonitrile: the nitriles are also considered as tertiary monamides. *cf* Amides and Imides.

Nitrile bases = Tertiary monamines: trimethylia, tri-ethylia, nicotylia, &c.

Nitrion, (nī'tri-on). [Nitrogen, *q.v.*]=NO_3: the radicle of nitric acid; also called Nitran.

Nitrites, (nī'trīts). [Nitrogen, *q v.*] Compounds of NO_2 with alkaline metals. *N. of amyl:* counteracts strychnia, and produces paralysis of muscle.

Nitro, (nī'trō). [Nitrogen, *q v.*] A prefix denoting the presence of Nitrogen as a constituent. *N. benzol* = Azo-benzol, *q.v.* *N. calcite:* a haloid mineral, chiefly nitrate of calcium. *N. glycerin*=Glonoin=$C_3H_5(NO_2)_3O_3$: a very explosive, oily liquid= Glycerin in which three atoms of H. are replaced by nitroxyl. *N. hydrochloric acid* = Aqua-regia, *q.v.* *N. muriatic acid* = Aqua-regia, *q.v.* *N. salicylic acid*=Indigotic acid=Anilic acid, *q.v.* *N theine*= Cholestrophan. a pearly, crystalline substance found in caffeine.

Nitrogen, (nī'trō-jen). [Nitre, *q.v.*; Gk. *gennao*, I produce.] N''': a colourless, tasteless, inodorous, neutral gas forming one-fifth in volume of atmospheric air, also called Azote. The indifference of N. causes easy decomposition, and hence the explosive power of salts of nitrogen. *Protoxide of N.*=Laughing Gas, *q v.*

Nitrosion, (nī-trō'si-on). [Nitrogen, *q.v.*]= NO_2: combines with metals of the alkalies to form nitrites.

Nitrosyl, (nī'trō-sil). [Nitrogen, *q.v.*] NO= Nitric oxide.

Nitrous, (nī'trus). [Nitrogen, *q v.*] *N. acid* $=N_2O_3$ now called N. anhydride. *N. ether* $=(C_2H_5)NO_2$ = Ethyl Nitrite: a yellow, odorous liquid. *N. oxide*=Laughing gas: N_2O.

Nitroxyl, (nī-troks'il). [*Nitrogen* and *Oxygen*]= NO_2=Peroxide of nitrogen.

Noah's dove. *v.* Columba Noachi.

Nobili's. *N. pile:* a thermo-electric battery composed of a number of couples of bismuth and antimony; *v.* Thermo-electricity. *N. rings:* coloured rings formed by decomposition of a copper or lead salt in circles round the negative pole of a galvanic battery.

Noble Metals. Gold, silver, mercury, platinum, &c., which cannot decompose water, and do not readily unite with oxygen: occur mostly in a native condition.

Noctiluca, (nok-ti-lu'ka). [L *nocte*, by night, *luceo*, I shine.] Phosphorescent protozoa, consisting essentially of vacuolated protoplasm, forming a nearly spherical animalcule.

Noctilucin, (nok-ti-lū'sin). [Noctiluca, *q.v.*] The semi-fluid substance which, in phosphorescent animals, causes light.

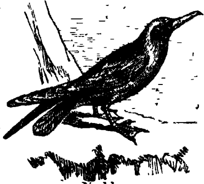
Noctuæ, (nok'tu-ē). [The Latin word.] Night-flying moths: a division of Lepidoptera.

Nocturnal, (nok-tur'nal). *N. animals:* mice, rats, bats, moles, owls, goat-suckers, &c., usually grey and inconspicuous.

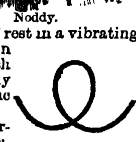
Nocturni, (nok-tur'ni)=Noctuæ, *q v.*

Nodal, (nō'dal). [Nodes, *q.v.*] *N. lines:* the lines of rest in a vibrating plate or membrane.

Noddy, (nod'di)= Booby, *q.v.*


Noddy.

Nodes, (nōdz). 1. Points of rest in a vibrating string or rod, or in a column of air. 2. Points in which the orbit of any heavenly body intercepts the ecliptic or orbit of the earth.


Node.

Noise. Sudden or discordant sounds. *cf.* Music. *v.* Sound.

Nolanaceæ, (no-la-nā'se-ē). [L. *nola*, little bell.] Nolanads: S. American herbs, with showy flowers, belonging to Echiales.

Nomadæ, (nom'a-dē). [L. *nomas*, wandering.] =Cuckoo-bees=Naked-bees, *q v.*

Nomenclature, (nō'men-klā-tūr). [*Nomenclatura*, the Latin word.] The vocabulary of any science, &c. *v.* Tables.

Nonagesimal, (non-a-jes'i-mal). [L. *nonagesimus*, ninetieth.] Belonging to the number 90, used for the English system of arc measurements, in which a right angle is equal to 90 degrees.

Nonagon, (non'a-gon). [L. *nonus*, ninth, Gk. *gonia*, angle.] Generally: a plane figure having nine angles, especially a regular plane figure bounded by nine equal sides.

Nonane, (non'ān) = Nonyl hydride = C_9H_{20}. *v.* Paraffin.

Nontronite, (non'trō-nīt). [Nontron, in France.] A mineral, chiefly hydrated silicate of iron.

Non-conductors of heat, electricity: shellac, india-rubber, sulphur, glass, silk, &c.

Nonylene, (non'i-lēn) = C_9H_{18} = Elaene: a hydrocarbon of the olefine series obtained from lime soap.

Nonylic acid. $C_9H_{18}O_2$=Pelargonic acid.

Noon, (nōn). [*Non*, the A.-S. word.] Twelve o'clock at mid-day, the commencement of the astronomical day. *Apparent N.:* when the centre of the sun is on the meridian. *Mean N.:* when the mean sun is on the meridian.

Nopal, (nō'pal). [A corruption of the native word.]=Opuntia cochinillifera: found on the shores of Mediterranean, the only cactus on which the cochineal insect feeds.

Nordhausen sulphuric acid. [N., a town in Saxony.]=*N. oil of vitriol*=Concentrated sulphuric acid.

Norfolk Island pine. Araucaria excelsa: a very large tree, about 200 ft. in height, also called Eutassa.

Norium, (nō'ri-um). No: an hypothetical metal.

Norma, (nor'ma). [The Latin name.]=The Rule: an unimportant constellation.

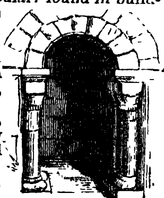
Normal, (nor'mal). [L. *norma*, a rule.] 1. Perpendicular. 2. A straight line which is perpendicular to a curve.

Normal organic acid = $H(C_nH_{2n-1}O)O$. *v.* Organic acids.

Norman arch. Semicircular: found in buildings of the Norman period. *cf.* Gothic arch.

Nortes, (nor'tēz) = Northers: dry, cold winds, blowing from September to March, in the Gulf of Mexico.

North polar distance, of a heavenly body from the N. celestial pole.


Norman arch.

Northern, (nor'THern). [North.] *N. crown*= Corona Borealis. *N. light*=Aurora-borealis, *q.v.* *N. hemisphere:* the half of the globe containing Europe, N. America, &c. *N. pole*=S. pole of the French: the pole of the N. hemisphere. *N. wasp*=

Vespa borealis: a tree wasp, also called Vespa arborea.

Northern constellations. Visible above the zodiac, Ursa Major and Minor, Cassiopea, Bootes, &c , 25 in number.

Norway. *N. fir*=Abies excelsa. *N. haddock* = Perca marina. *N. lobster* = Nephrops Norvegicus.

Norwegian, (nor-wē-ji-an). *N. stove:* a wooden box, lined with felt, in which partially cooked food is placed, when the cooking is finished by the same heat, which escapes but very slowly. *N. wasp*=Vespa Norvegica: a tree wasp.

Norwich crag, (nor'idj)=Fluvio-marine crag: a bed of sand and loam containing both river and sea shells; one of the Newer Pliocene.

Nose, (nōz). [*Nosu*, the A.-S. name.] The organ of the sense of smell; an open passage from nose to mouth is the only absolute difference between fishes and reptiles.

Nosology, (nos-ol'ō-ji). [Gk. *nosos*, disease; *logos*, discourse.] The science of disease; and of the classification of its various phases.

Nostochineæ, (nos-tok'i-ne-ē) = Nostocs: unsymmetrical algæ, with blue-green contents.

Notation, (nō-tā'shun). The expression of numerical quantities by means of figures. *Chemical N.:* the use of initials and numbers to express chemical composition. *Musical N.*, v Scale.

Notchwing, (noch'wing)=Teras caudana: a moth.

Note, (nōt). [L. *nota*, a mark.] 1 A musical sound or tone. 2. The character representing it. *Key N.:* the chief note of a scale, *q.v.*; also called Do.

Nothosaurus, (noth-o-saw'rus). [Gk *nothos*, bastard; *saurus*, lizard.] A genus of Plesiosauria, *q.v.*: an extinct marine reptile, remains of which are found in Trias and Muschelkalk.

Notobranchiata, (nō-tō-brang-ki-ā'ta). [Gk. *notos*, back; *bragchion*, gill]=Errantia, *q.v.*

Notochord, (nō'tō-kord). [Gk. *notos*, back; *chorde*, string.]=Chorda dorsalis: the earliest development of the vertebral column; a temporary rod of cellular matter; not found in invertebrate animals.

Notodontidæ, (nō-tō-don'ti-dē). [Gk. *notos*, back; *odous*, tooth.] A family of moths, belonging to Lepidoptera, called Tooth-backs.

Notonecta, (nō-tō-nek'ta). [Gk. *notos*, back.] =Boat-fly: an insect belonging to Hydrocorisæ. *N. glauca*=Water-boatman: in day floats on water, at night flies about.

Notornis, (nō-tor'nis). [Gk. *notos*, south; *ornis*, bird]=Dinornis: a bird belonging to Grallatores, supposed to be extinct; recently discovered in New Zealand.

Nototherium, (nō-tō-thē'ri-um). [Gk. *notos*, south; *therion*, beast.] An herbivorous marsupial mammal of Australia, fossil remains of which have been found in Pleistocene.

Nototrema, (nō-tō-trē'ma). *N. marsupialum:* an American tree frog, the female of which has a pouch over the whole of the back containing the eggs.

Noturn, (nō'turn). Back of thorax in insects.

Novaculite, (nō-vak'ū-līt). [L. *novacula*, razor.] A variety of argillaceous slate; also called hone, oil-stone, turkey-stone, and whetstone.

November moth=Oporobia dilatata: found in November.

Nubecula, (nū-bek'ū-la). [L. *nubecula*, little cloud.] The two Magellanic clouds are called Nubecula major and minor.

Nubium=Mare Nubium: one of the plains on the surface of the moon, supposed to have been a sea formerly, about 700 miles square.

Nucifraga, (nū-sif'ra-ga). [L. *nux*, nut; *frango*, I break.]=Nutcracker: a crow-like bird.

Nucleated, (nū-klē-ā'ted). [Nucleus, *q.v.*] Having nuclei. *N. cell*, of blood: a thin spheroidal sac containing a vesicular nucleus in a fluid.

Nuclei, (nū'klē-ī). [Nucleus, *q.v.*] Plural of nucleus, *q.v.*

Nuclein, (nū'kle-in). [Nucleus, *q.v.*] A substance resembling mucin.

Nucleobranchiata, (nū-klē-ō-brang-ki-ā'ta). [L. *nucleus*, kernel; Gk. *bragchia*, gills.]= Heteropoda, *q.v.*: highly organised marine animals; a sub-division of Gasteropoda.

Nucleolus, (nū-klē'ō-lus). [The Latin word] A very small nucleus; also used for the sperm-element of Infusoria.

Nucleus, (nū'kle-us). [The Latin word.] 1. A germinal body found in cells of organic bodies. 2. A body having a stronger or weaker attraction for the gas, vapour, or salt of a solution than for the liquid of it, and, therefore, modifying by its presence the freezing and boiling points.

Nudibranchiata, (nū-di-brang-ki-ā'ta). [L. *nudus*, naked; Gk. *bragchia*, gills] Molluscous animals having uncovered gills and no shell, excepting in the embryo state; the most highly developed order of Gasteropoda.

Nugget, (nug'get). A general term for a piece of native gold or other metal.

Number, (num'ber). [*Numerus*, the Latin word.] *Golden N.* v. Golden number. *Prime N.:* a number, such as 3, 5, 7, 11, 13, 17, &c., that cannot be divided by any whole number but 1. *Whole N.*=Integer: a multiple of unity; a number having no fractional part. *cf.* Fraction.

Numenius, (nu-mō'ni-us). [The Latin name.] =Curlew: a bird belonging to Grallatores.

Numeration, (nū-mer-ā'shun). [*Numeratio*, the Latin word.] The art of estimating and expressing numerical quantities. *cf.* Notation.

Numerator, (nū-mer-ā'tor). [The Latin word.] The upper number of a fraction, which shows how many of the parts expressed by the denominator are taken.

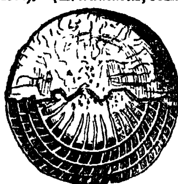
Numerical, (nū-mer'i-kal). Relating to number. *N. equation:* one in which the coefficients are numbers.

Numidia, (nū-mid'i-a). [The Latin name.]= Guinea-fowl: a turkey-like bird belonging to Pavonidæ.

Numidian, (nū-mid'i-an). [Numidia, in Africa.] *N. crane*=Demoiselle: a bird belonging to Grallatores=Grus virgo=Anthropoides virgo.

Numismatics, (nū-mis-mat'iks). [L. *numisma*, money.] The science of coins and metals.

Nummulites, (num'ū-līts). [L. *nummus*, coin; *lithos*, stone.] Fossil Foramifera, resembling coins in shape, occuring in Eocene formations, and found in the Alps, Pyrenees, Himalayas, &c.



Nummulites.

Nummulitic, (num-ū-lit'ik). [Nummulites, *q.v.*] *N. period*=Middle Eocene period: Rhizopoda are most important and largest in this period.

Nuphar, (nū'far). [*Naufar*, the Arabic name.]=Yellow water-lily=Brandy-bottle: an aquatic plant, with yellow flowers, belonging to Nymphaceæ.

Nurse, (nurs) [*Norice*, the A.-S. name] *N. forms*. intermediate forms of development in acalephæ, entozoa, &c.

Nussierite, (nō-si-e'rīt). [Nussiere, in France.] =Pyromorphite, *q.v.*

Nut, (nut). [*Hnut*, the A.-S. word.] 1=Glans: a one-seeded indehiscent fruit, with dry, hard pericarp. 2. A hollow screw in which a solid screw works. *Brazil N.*=Fruit of Bertholletia excelsa. *Ground N.* =Arachis hypogæa: a plant belonging to Leguminaceæ. *N. cracker*=Nucifraga, *q.v.* N. *galls*. *v.* Galls. *N. hatch*=Sitta, *q.v.* *N. meg*. *v.* Nutmeg *N. pine*=Pinus monophyllus. *N. weevil*=Balaninus nucum.

Nutation, (nū-tā'shun). [L. *nutatio*, nodding.] A vibratory motion of the earth's axis, caused by the moon's attraction.

Nutmeg, (nut'meg). [L. *nux moschata*, musk-nut.]=Albumen of seeds of Myristica moschata, &c. *Aril of N.* =Mace. *N. butter*: a fat. *v.* Fats.



Nutmeg

Nutmegs=Myristicaceæ, *q.v*

Nutrientia, (nū-tri-en'-shi-a). [L. *nutrio*, I nourish.] Term used by Ehrenberg for Mammalia and Birds, which nourish their young.

Nutrition, (nū-trish'un). [L. *nutrio*, I nourish.] =Nourishment.

Nuttalite, (nut'ta-līt). [Prof. Nuttall] A mineral, chiefly hydrated silicate of aluminium and calcium=Scapolite.

Nux, (nuks). [The Latin word] Nut. *N. vomica*=Seeds of strychnos n.v.

Nuytia, (nī'shi-a). A plant belonging to *N. floribunda*=Fire tree: named from its bright orange blossoms.

Nyctaginaceæ, (nik-ta-jin-ā'se-ē). [Nyctago, the typical genus.]=Nyctagos: herbs and trees belonging to Chenopodales.

Nycticebinæ, (nik-ti-sē'bi-nē). [Nycticebus, *q.v.*] A sub-family of Lemuroidæ: ape-like animals; slow, with tail short, if any; the fourth finger is very short; they eat birds, insects, fruit, &c.

Nycticebus, (nik-ti-sē'bus). [Gk. *nyx*, night; *kebos*, monkey.] Night-ape: the typical animal of Nycticebinæ, *q.v.*

Nyctichelidon, (nik-ti-kel'i-don). [Gk. *nyx*, night; *chelidon*, swallow.]=Caprimulgus, *q v.*: a bird; also called night-swallow, night-jar, and goat-sucker.

Nycticorax, (nik-tik'o-raks). [Gk. *nyx*, night; *korax*, raven.]=Night-heron: a bird belonging to Grallatores. also called Ardea nycticorax

Nyctiornis, (nik-ti-or'nis). [Gk. *nyx*, night: *ornis*, bird]=Night-bird: a bird belonging to Meropidæ, *q v.*

Nyctipithecus, (nik-ti-pi-thē'kus). [Gk. *nyx*, night, *pithekos*, ape.]=Night-ape: a nocturnal animal belonging to Cebidæ.

Nyl-ghau, (nil'gaw). [Persian, *nil*, blue; *gaw*, bullock.] A variety of the antelope found in India.

Nymphæa, (nim'fē-a). [L. *nympha*, water-nymph]=Water-lily: the type of Nymphaceæ, *q v.* *N. alba*: white water-lily= Victoria-regia.

Nymphaceæ, (nim-fā'se-ē). [Nymphæa, *q v.*] =Water-lilies: floating herbs, with large fleshy leaves and large showy flowers, belonging to Nymphales.

Nymphales, (nim-fā'lez). [Nymphea, *q.v.*]= Plants with dichlamydeous flowers, and having no woody stems, forming a division of hypogynous Exogens, and approximating to Endogens.

O.

Oak, (ōk). [*Ac*, the A.-S. name.]=**Quercus**: a tree belonging to Corylaceæ; the timber is hard, strong, and durable; the bark is used for tanning. *British O.*=Robur. *Chestnut O.*=Prinus. *Holm O.*=*Holly O.*= Ilex. *Stone O.*=Lithocarpus javensis. *O. beauty*=A moth: Amphydasis prodromaria. *O egger-moth* = Bombyx quercus, &c. *O. moth* Tortrix viridana.



Oak.

Oakum, (ō'kum). [*Acumbi*, the A.-S. name.] Loose yarn made by untwisting old ropes, &c.; used for caulking, &c.

Oar, (ōr). [*Ar*, the A.-S. word.] *O. footed Crustaceans*=Copepoda, *q.v.*

Oasis, (ō'ā-sis). [The Greek word.] A fertile place in a desert, usually near water.

Oat, (ōt). [*Ata*, the A.-S. name.] Avena sativa: a plant belonging to Graminaceæ, the grains of which are used for food, especially

for horses. *Animal O.*=Avena sterilis· the fruit of which moves about the ground owing to the twisting and untwisting of its awns as the air becomes more or less damp. *O. grass*=Avena.

Oatmeal. The ground grains of oats.

Obelisk, (ob'ō-lisk). [*Obeliskos*, the Greek word.] A four-sided stone pillar, usually monolithic, tapering upwards.

Oberon, (ō'be-ron). A satellite of Uranus.

Object glass. The lens in a microscope or a telescope which is nearest to the object viewed.

Oblate, (ob-lāt'). [*Oblatum*, the Latin word.] Spheroidal: orange-shaped; having the form of a sphere, flattened slightly at the extremities of one diameter.

Oblique, (ob-lēk'). [*Obliquus*, the Latin word.] Not parallel, nor perpendicular slanting. *O. crystals:* with one axis perpendicular to each of the others.

Obliquity, (ob-lik'wi-ti). [Oblique, *q.v.*] Deviation from parallelism, or from being at right angles. *O. of ecliptic:* the inclination of the equator and ecliptic.

Oblong, (ob'long) [*Oblongus*, the Latin word.] 1.=Rectangle, *q.v.* 2.=Rectangular, *q.v.*

Oboe, (ō'boi). [*Hautbois*, the French name.] =Hautboy: a reed musical instrument.

Observatory, (ob-zer'va-to-ri). [L. *observo*, I note.] A place adapted for the observation of astronomical and other phenomena.

Obsidian, (ob-sid'i-an). [*Opsianos*, the Greek name.] = Volcanic glass = Fused Trachytic rock. a variety of amorphous felspar.

Obtected, (ob-tek'ted). [L. *obtego*, I cover.] Covered: especially used of animals covered with a hard shelly case.

Obtuse, (ob-tūs'). [L. *obtusus*, blunt.] Blunt or rounded: the opposite of acute. *O. angle* one that is greater than a right angle.

Occipital, (ok-sip'it-al) = Epencephalic: belonging to the back of the cranium. *O condyles:* connect the skull with the atlas vertebræ. *O. foramen:* an opening in the lower back part of the skull.

Occluded, (ok-klū'ded). [L. *occlusio*, I shut.] Enclosed: shut in.

Occultation, (ok-kul-tā'shun). [L. *occultus*, hidden.]=Eclipse: used of the eclipse of stars by the moon.

Ocean, (ō'shun). [*Oceanus*, the Latin word.] Sea: the general contour of the ocean has been the same as now since the Silurian epoch. Oceans are generally areas of subsidence.

Ocelli, (ō-sel'li). [L. *ocellus*, little eye.] Simple eyes =Stemmata, *q.v.*

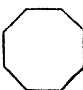
Ocelot, (ō'se-lot). [The Mexican name.] = Felis pardalis: a cat-like animal.


Ocelot.

Ochnaceæ, (ok-nā'se-ē). [Gk. *ochne*, pear.]=Ochnads: tropical trees and shrubs belonging to Rutales, named from the leaves.

Ochre, (ō'kr). [Gk. *ochros*, yellow.] A general name for a number of oxidised metallic ores, some of which are used as pigments.

Octagon, (ok'ta-gon). [Gk *okto*, eight; *gonia*, angle.] A plane figure formed by eight sides.


Octagon

Octahedron, (ok-ta-hē'dron). [Gk. *okto*, eight, *hedra*, seat.] A solid formed by the intersection of eight planes; in a regular octahedron the faces are all equilateral triangles

Octave, (ok'tāv). [L. *octavus*, eighth.]= Eighth, *q.v.*

Octane, (ok'tān) [L. *octo*, eight.] *v.* Hydrocarbons, 1st series.

Octopoda, (ok-tō'po-da). [Octopus, *q.v.*] Cuttle-fishes, with not more than 8 arms: a sub-division of Dibranchiata, *q.v*

Octopodidæ, (ok-tō-pod'i-dē) [Octopus, *q.v.*] =Poulpes: cuttle-fish, argonaut, &c., cephalopodous mollusca. 1. A sub-division of Octopoda. 2. Octopoda.

Octopus, (ok-tō'pus). [Gk. *okto*, eight; *pous*, foot.]=Eight-armed cuttle-fish: the type of Octopoda.

Octyl, (ok'til) [Gk. *okto*, eight; *hyle*, material.] C_8H_{17}. The radicle of the Octylic series. *O alcohol*=Castor oil.

Octylamine, (ok-til'a-min). [Octyl and Amine, *q.v.*]=C_8H_{16}=Caprylamine: a liquid obtained from Octylic alcohol.

Octylene, (ok'til-ēn). [Octyl, *q.v.*]=C_8H_{16}= Caprylene: a liquid hydrocarbon of the olefine series.

Octylia, (ok-til'i-a) [Octyl, *q.v.*]=$C_8H_{19}N_2$ Caprylia: a base from octyl alcohol or castor oil.

Octylic, (ok-til'ik). [Octyl, *q.v.*] Related to the base octylia.

Ocymum, (o'si-mum). [The Latin name.] Basil: a fragrant plant belonging to Lamiaceæ.

Ocypoda, (o-sip'o-da). [Gk. *ochys*, swift; *pous*, foot.] 1. Sand-crab: belonging to Brachyura, 2. A beetle: belonging to Brachelytra.

Ocypterus, (ō-sip'ter-us). [Gk. *ochys*, swift; *pteryx*, wing.] Swallow-shrike: a bird belonging to Laniadæ; also called the swift-shrike.

Odling's system of notation. Monads are expressed by i, as H^{i}, dyads by ii, as O^{ii}, triads by iii, as N^{iii}, tetrads by iv, as C^{iv}, &c

Odometer, (o-dom'e-ter). [Gk. *hodos*, road; *metron*, measure.] An apparatus for measuring the distance travelled by a vehicle.

Odontaspis, (ō-don-tas'pis). [Gk. *odous*, tooth. *aspis*, shield.] A shark, known only by fossil teeth, found in Eocene rocks.

Odontography, (ō-don-tog'ra-fi). [Gk. *odous*, tooth, *grapho*, I write.] The description of teeth.

Odontoid process, (ō-don'toid). [Gk. *odous*, tooth; *eidos*, form.] A bony projection of the second vertebra, upon which the head turns.

Odontophora, (ō-don-tof'ō-ra). [Odontophore,

q.v.] A sub-division of Mollusca, including Cephalopoda, Pteropoda, and Gasteropoda, all of which have odontophores.

Odontophore, (ō-don'tō-fōr). [Gk. *odous*, tooth; *phero*, I carry] A masticatory organ found in the more highly developed mollusca. A cartilaginous cushion supporting a strap carrying several lingual teeth.

Odontopetræ, (ō-don-tō-pet'rē). [Gk. *odous*, tooth, *petra*, stone.]=Glossopetra: a general term for fossil teeth.

Odontopteryx, (ō-don-top'ter-iks). [Gk. *odous*, tooth: *pteryx*, wing.] *O. toliapicus*. A bird, known only by fossil remains, found in London clay.

Odontosaurus, (ō-don-tō-saw'rus). [Gk. *odous*, tooth; *saurus*, lizard.] A labyrinthodon reptile, known only by one jaw and fifty teeth.

Odour sensations=Rhinaisthenics, *q.v*

Œcodoma, (ē-kod'o-ma). [Gk. *oikodomos*, builder.] *O. cephalotes*=Leaf carrying ant, *q.v.*

Œdicnemus, (ē-dik-nē'mus). [Gk. *oidos*, swelling: *kneme*, knee.]=Thick-knee: a wading bird belonging to Grallatores.

Œdipina, (ē-dip'i-na). [Gk. *oidos*, swelling, *pinæ*, shell.] An elongated oft-like animal.

Œdipoda, (ē-dip'o-da). [Gk. *oidos*, swelling, *pous*, foot.]=Pachytylus=Locust, *q.v.*: an insect, belonging to Orthoptera, named from its thick hind legs.

Œnanthe, (ē-nan'the). [Gk. *oinos*, wine; *anthos*, flower.]=Water-dropwort: an aquatic herb, belonging to Apiaceæ, named from its scent.

Œnanthic, (ē-nan'thik). [Gk. *oinos*, wine; *anthos*, flower.] *O. ether*=Rutic and Caprylic ethers: causes the odour of wine, also called Hungarian wine-oil.

Œnanthol, (ē-nan'thol). [Œnanthic, *q.v.*]=$C_7H_{14}O$ = Œnanthylic aldehyde, obtained from castor oil.

Œnanthyl, (ē-nan'thil). [Œnanthic, *q.v*; Gk. *hyle*, material.]=Heptyl: the radicle of the Heptylic or Œnanthylic series. *O. alcohol* =Heptyl alcohol.

Œnanthylene, (ē-nan'thi-lēn). [Œnanthyl, *q.v.*] C_7H_{14}=Heptylene, *q.v.*

Œnanthylic, (ē-nan'thil-ik). [Œnanthyl, *q.v.*] *O. acid*=$C_7H_{14}O_2$: an aromatic acid; also called azoleic acid. *O. aldehyde*=$C_7H_{14}O$= Œnanthol, *q.v.*

Œnothera, (ē-no-thē'ra). [Gk. *oinos*, wine; *thera*, hunt.]=Evening primrose: an herb belonging to Onagrariaceæ.

Œsophagus, (ē-sof'a-gus). [Gk. *oisos*, I carry; *phagein*, to eat.]=Gullet: the passage from the back of the mouth to the stomach.

Œstridæ, (ēs'tri-de). [Œstrus, *q.v.*; Gk. *eidos*, form.] A family of flies belonging to Diptera.

Œstrus, (ēs'trus). [Gk. *oistros*, fly.] A fly, the type of Œstridæ. *O. bovis*=*O. equi*= Botfly, gadfly, &c.

Œthusa=Æthusa, *q.v.* *O. cynapium*=Lesser hemlock.

O.F. Used for oxidising flame of blowpipe.

Ohm=B.A. unit=Unit of resistance. *v.* Electro-magnetic units. 1,000,000 *O's*= Megohm. 9 *O's* nearly=The French unit of resistance.

Ohm's law. [Professor Ohm.] That the intensity of a galvanic current is equal to the electro motive force of a battery divided by its resistance and that of the wire; expressed by $I=\frac{E}{R}$: in which I=intensity of current, E=its electro-motive force, and R=the resistance of the battery and circuit.

Oidemia, (oi-dē'mi-a) [Gk. *oidema*, surf.]= Surf-duck: a bird belonging to Anatidæ.

Oidium, (oi'di-um). [Gk. *oidao*, I swell.] Thrush-fungus=Vine-disease: a fungus belonging to Mucedines

Oiketicus, (oi-ket'i-kus). [Gk. *oikos*, house.] *O Sandersii*: house-builder moth; also called lictor-insect.

Oil, (oil). [*Oleum*, the Latin word.] A general term for a great variety of unctuous liquids. *v.* Oils. *Boiled O*: linseed oil, heated with litharge. *Castor O.*: from seeds of Ricinus communis. *Coal tar O.*=Dead O. *Dippel's O*=Bone O, *q.v.* *Rock O.*=Petroleum, *q.v.* *O of anise*=O. of fennel *O. beetle*=Meloe: which ejects oil in drops from its leg. *O. of ben:* from Moringa aptera. *O. of bitter almonds*=Benzoyl hydride. *O. of garlic*= Sulphide of allyl *O gas.* *v.* Oil-gas. *O. of neroli:* from orange tree blossoms. *O. palm*=Elæis Guineensis. *O. of potatoes:* a residuum of distillation of vegetables, contains propyl, butyl, amyl, and other alcohols. *O. tree*=Bassia longifolia. *O of vitriol.* *v.* Sulphuric acid

Oils, (oilz). Organic, liquid, unctuous substances composed of carbon, hydrogen, and, usually, oxygen; useful for fuel and lighting; some used as food. *Animal O.*: of animal origin. *Drying O*: which absorb oxygen and solidify, such as linseed, walnut, hemp, &c. *Essential O.*=Volatile oils, *q.v.* *Fatty O.*=*Fixed O.*: that cannot be distilled without decomposition, nor volatilised below 450° F. *Sweet principle of O.*=Glycerin, *q.v.* *Volatile O.*: are not decomposed during distillation; chiefly from vegetables. *Vegetable O.*: in seeds.

Oil gas=Butylene=Tetrylene=C_4H_8: a colourless, combustible gas, liquid at 0° F.

Oilstones: slaty stones used as whetstones; also called Nephelite.

Oken's classification of animals. [By Professor Oken, of Zurich, in 1809.]

Intestinal animals=Body animals=Touch animals.
  Digestive animals=Radiata.
  Circulative animals=Mollusca.
  Respirative animals=Articulata.
Flesh animals=Head animals=Vertebrata.
  Carnal animals=Fishes, reptiles, and birds.
  Sensual animals=Mammalia.

Okenite, (ō'ke-nīt). [Professor Oken] A tough, white mineral, chiefly hydrated silicate of calcium.

Olacaceæ, (ō-la-kā'se-ē). [Gk. *olax*, furrow.]

=Olacads: trees and shrubs, with small fragrant flowers, belonging to Berberales.

Olbers, (ol′berz). In moon, *q.v.*

Oldhamia, (ōl-dā′mi-a). [Professor Oldham.] A sea-weed or a sertularian zoophyte: known only by fossil remains, found in Cambrian rocks; supposed a polyzoon: probably a plant.

Old-man=Lichen saxatilis.

Old-man's beard=Clematis vitalba.

Old red sandstone=Devonian, *q.v.*

Olea, (ol′e-a). [Gk. *elaia*, olive.] Olive, &c.: a plant the type of Oleaceæ, *q.v.*, gives virgin-oil. *O. Europæa*=Olive.

Oleaceæ, (ol-e-ā′sə-ē). [Olea, *q.v.*] = Olive-worts: olive, ash, &c.: trees and shrubs, with dichotomous branches, belonging to Solanales.

Oleander, (ō-le-an′der)=Nerium, *q.v.*

Oleaster, (ō-le-as′ter). [Gk. *olea*, olive; *instar*, likeness.]=Wild-olive: the type of Elæagnaceæ, *q.v.*

Oleasters, (ō-le-as′terz). [Oleaster, *q.v.*]= Elæagnaceæ, *q.v.*

Oleates, (ō′le-āts). [Oleic, *q.v.*] Compounds of Oleic acid with bases.

Olecranon, (ō-lek′ra-non). [Gk. *olene*, elbow; *kranos*, helmet.] A projection of the ulna forming the elbow.

Olefiant gas, (ō-lē′fi-ant). [L. *oleum*, oil; *facio*, I make.]=C_2H_4=Elayl=Ethylene: a colourless, slightly odorous, inflammable gas, may be liquefied by pressure, and, mixed with chlorine, becomes an oil called Dutch liquid.

Olefines, (ō′le-fīnz). [Olefiant, *q.v.*] Olefiant gas series: ethylene, methylene, amylene, tetrylene, methene, &c.

Oleic acid, (ō′le-ic). [L. *oleum*, oil.]=$C_{18}H_{34}O_2$: an oily substance found in all fats

Oleic series of acids=$C_nH_{2n-2}O_2$: including acrylic, crotonic, and oleic acids, the last being the type of the series.

Olein, (ō′le-in). [L. *oleum*, oil.]=$C_{57}H_{104}O_6$: a colourless liquid; a constituent of fats and oils. *O. of linseed oil*=Linolein, &c

Oleo-resins. A group of balsams, including Canada balsam, copaiba balsam, and Mecca balsam.

Olevinite=Olivinite, *q.v.*

Olfactory, (ol-fac′to-ri). [L. *olfacio*, I smell.] *O. lobe:* the shape of a life-preserver; small in man; larger in the rabbit; very large in the lamprey. *O. nerves:* the nerves of smell, the first pair of cerebral nerves, the terminations of which are in the nasal cavities; really processes of the brain and not nerves.

Olibanum, (ō-lib′a-num). [*Libanos*, the Greek name.] = True frankincense: an aromatic resin obtained from the tree Boswellia. *cf.* Frankincense.

Oligocene, (o-lig′ō-sēn). [Gk. *oligos*, few; *kainos*, new.]=Lower Miocene.

Oligochæta, (ŏl-i-gō-kē′ta). [Gk. *oligos*, few: *chaite*, bristle.]=Terricola=Earth and Water worms: a division of Annelida; hermaphrodite: have setæ or bristles for locomotion.

Oligoclase, (o-lig′ō-klāz) [Gk. *oligos*, few; *klasis*, fracture]=Soda-lime felspar: a variety of felspar, chiefly silicate of aluminum.

Oligodon, (o-lig′ō-don). [Gk. *oligos*, few; *odous*, tooth.] Spotted-adder: a snake.

Olive, (ol′iv). [*Oliva*, the Latin name.] 1.= Olea Europæa: a tree the type of Oleaceæ. 2. A colour: a compound of $\frac{2}{6}$ green and $\frac{2}{6}$ purple.



Olive.

Olive-worts = Oleaceæ, *q.v.*

Olivine, (ol′i-vīn). [Olive, *q.v.*] A mineral of the topaz group, chiefly silicate of magnesia and iron, crystallising in rhombs, usually green coloured, and found in lava; also called chrysolite; sometimes found in meteorites.

Olivinite, (o-liv′i-nīt). [Olive, *q.v.*] One of the copper group of minerals, chiefly arseniate of copper.

Olympiad, (ō-lim′pi-ad). [Olympias, the Greek name.]=4 years.

Omalidæ, (o-mal′i-dē). A family of beetles belonging to Brachelytra.

Ombrometer, (om-brom′e-ter). [Gk. *ombros*, rain; *metron*, measure.] A rain gauge

Omentum, (o-men′tum). [The Latin word.] =Caul: a membrane connecting the stomach, colon, &c.

Omnivoræ, (om-niv′o-rē) [L. *omnis*, all, *voro*, I eat] Giebel's term for bears, &c.; Owen's term for animals such as the hog.

Omphalea, (om′fa-le-a). [Omphalos, *q.v.*] A plant belonging to Euphorbiaceæ *O. triandra*=Cob-nut=Hog-nut of Jamaica.

Omphalos, (om′fa-los). [Gk. *omphalos*, navel.] =The navel: the trace of the attachment of the umbilical cord.

Onager, (on′a-jer). [The Latin name.] The wild ass=Asinus onager.

Onagraceæ; (on-a-grā′se-ē). [Onager, *q.v.*]= Onagrads=Fuchsias: herbs and shrubs belonging to Myrtales, named from the leaves resembling the ears of an ass.

Onchophora, (on-kof′o-ra). A division of Cœlelmintha, *q.v.*

Onchus, (on′kus). A marine shark-like fish of a high order of development, known only by fossil spines, found in Upper Silurian.

Onion, (un′yun). [*Oignon*, the French word.] =Allium: an herb belonging to Liliaceæ.

Onobrychis, (on-ob′ri-kis)=Saint-foin: an herb belonging to Leguminaceæ. *O. sativa*= Holy-hay.

Ononis, (on-ō′nis). [The Greek name.] Rest-harrow: an herb belonging to Leguminaceæ. *O. arvensis*=Wild liquorice

Onopordon, (on-o-por′don). [The Greek name.] =Cotton-thistle=Scotch-thistle: an herb belonging to Asteraceæ. *O. acanthium*= Wild artichoke.

Onosma, (on-os′ma). [Gk. *onos*, ass; *osme*, smell.] A plant belonging to Boraginaceæ.

Onygenaceæ, (on-i jen-ā'se-ē). [Gk. *onyx*, nail, *gennao*, offspring.] Fungi, developed on feathers, hair, hoofs, horns, &c, belonging to Ascomycetes.

Onygenei, (on-i-jen'e-ī). [Gk. *onyx*, nail; *gennao*, I produce.] Hoof-fungus, &c.: fungi, all small, developed on animal substances, have a club-shaped receptacle.

Onyx, (on'iks). [Gk. *onyx*, nail.] A variegated variety of agate; a variety of chalcedony in variously coloured even layers.

Oogonia, (ō-o-gō'ni-a). [Gk. *oon*, egg; *gonia*, corner.] In fungi: cells in which oospheres are formed.

Oogonium, (ō-o-gō'ni-um). Singular of oogonia, *q.v.*

Oolean. An Oceanic race.

Oolite, (ō'o-līt) [Gk. *oon*, egg; *lithos*, stone.] A variety of carbonate of lime. *Great O.*= Bath-stone, also called Forest-marble. *O. limestone:* composed of small accretions of limestone surrounding grains of sand, sometimes found in rocks older, and in others newer, than the oolitic.

Oolitic system, (ō-o-lit'ik). [Oolite, *q.v.*]= Jurassic system: a secondary formation between the Lias and the Cretaceous.

Oosphere, (ō'os-fēr). [Gk. *oon*, egg; *sphaira*, ball.] Germinal bodies in fungi.

Oospore, (ō'os-spōr). [Gk. *oon*, egg; *spora*, seed.] An oosphere, *q.v.*, with a wall formed round it, capable of germination at once or at a future time.

Oostegite, (ō-os'tē-jīt). [Gk. *oon*, egg; *stego*, I cover.] Scales, &c., protecting the eggs in Annulosa.

Ootheca, (ō-o-thē'ka). [Gk. *oon*, egg, *theka*, case.] = Egg-purse = Egg-case of cockroach: contains eggs, like peas in a pod.

Opah fish=Lampris, *q.v.*; also called King-fish.

Opal, (ō'pal). [*Opalus*, the Latin name.] A translucent, iridescent, amorphous mineral, chiefly hydrated silica. Girasol, hydrophane, hyalite, menilite, and fiorite are varieties of opal. *Fire O.*=Girasol.

Opelet=Anthea cereus: a fleshy zoophyte; the chief constitutent in the edible dish, Rastegna.

Opera glass. A binocular variety of the telescope, used for short distances.

Opercular, (ō-per'kū-lar). [Operculum, *q.v.*] Connected with the operculum, *q.v.* *O. bones:* form the gill-cover of fishes.

Operculum, (ō-per'kū-lum). [L. *operculum*, lid.] 1. Gill-cover: closes the entrance of the branchial chamber of fishes; possibly the homologue of the human ear-flap. 2. Used generally for any cover to an opening, as of the shell of Gasteropoda, &c.

Ophiacantha, (of-i-a-kan'tha). [Gk. *ophis*, serpent; *akantha*, spine.] *O. spinulosa:* a star-fish abundant in deep water of North Atlantic.

Ophiderpeten, (of-i-der'pe-ten). [Gk. *ophis*, serpent, *herpeton*, reptile.] An amphibious animal belonging to Labyrinthodonta, allied to Ophiomorpha.

Ophidia, (of-id'i-a). [Gk. *ophis*, serpent]= Snakes: reptiles in which the limbs are rudimentary, or entirely absent, have long, worm-like, scaly bodies, and no sternum; and progress by means of rib-bones, which are very numerous. *Families of O.:*—

Viperine—
- Crotalidæ.
- Viperidæ.

Colubrine—
- Hydridæ.
- Boidæ.
- Colubridæ.

Water-snakes=Hydrophidæ=Hydridæ.

Ophidium, (of-id'i-um). [Gk. *ophis*, snake.] an eel-like fish belonging to Malacopterygii.

Ophidobatrachia, (of-i-dō-bat-rā'ki-a). [Gk. *ophis*, serpent; Batrachia, *q.v.*] = Ophiomorpha, *q.v.*

Ophiocoma, (of-i-ok'o-ma). [Gk. *ophis*, serpent; *kome*, hair.]=Brittle-star: a star-fish belonging to Ophiuroidea, it cannot swim, and moves only on solid surfaces.

Ophioglossaceæ, (of-i-ō-glos-sā'se-ē). [Ophioglossum, *q.v.*] Adder's-tongues: plants, with hollow stems, and without chlorophyll, belonging to Filicales; intermediate between Lycopodiaceæ and Filices.

Ophioglossum, (of-i-ō-glos'sum). [Gk. *ophis*, snake; *glossa*, tongue.] Adder's-tongue: a fern-like plant the type of Ophioglossaceæ.

Ophiolepis, (of-i-ol'o-pis). [Gk *ophis*, serpent; *lepis*, scale.] An echinoderm.

Ophiolite, (of'i-ō-līt). [Gk. *ophis*, serpent; *lithos*, stone.]=Serpentine, *q.v.*: a mineral, chiefly silicate of magnesia, named from the serpent-like waves of cloudiness; also called Verd-antique.

Ophiology; (of-i-ol'o-ji). [Gk. *ophis*, serpent; *logos*, discourse.] The sub-division of zoology which treats of serpents.

Ophiomorpha, (of-i-o-mor'fa). [Gk. *ophis*, serpent; *morphe*, shape.]=Gymnophiona: a burrowing, snake-like animal, belonging to Amphibia, having a body marked with transverse grooves, no limbs, and a small head. Found in hot climates, probably the last remnant of a race to which Labyrinthodonts belong.

Ophiophagus, (of-i-of'a-gus). [Gk. *ophis*, serpent; *phago*, I eat.] A poisonous, colubrine snake, named from being supposed to feed on other snakes.

Ophiopholis, (of-i-of'ō-lis). [Gk. *ophis*, serpent.] *O. aculeata:* a star-fish abundant in deep water of Atlantic.

Ophioxylon, (of-i-oks'i-lon). [Gk. *ophis*, serpent; *xylon*, wood.] Snake-wood: Strychnos colubrina, named from being used medicinally in cases of snake-bite.

Ophisaurus, (of-i-saw'rus). [Gk. *ophis*, serpent, *sauros*, lizard.] Glass-serpent=Anguis ventralis: a snake, with a reptile-like head, so fragile as to be easily broken into several pieces.

Ophite, (of'īt). [Gk. *ophis*, serpent.]=Ophiolite=Serpentine, *q.v.*

Ophiuchus, (of-i-ū'kus) [Gk. *ophis*, serpent; *echein*, to hold.] The Serpent Bearer: a constellation, of which Ras Alague is the chief star.

Ophiura, (of-i-ū'ra). [Gk. *ophis*, snake, *oura*, tail.]=Brittle-stars: animals, belonging to Echinodermata, the type of Ophiuridæ.

Ophiuridæ, (of-i-ū'ridē) [Gk. *ophis*, serpent, *oura*, tail, *eidos*, form] Brittle-stars, Sand-stars, &c.: a division of Ophiuroidea.

Ophiuroideæ, (of-i-u-roi'de-a). [Gk. *ophis*, serpent, *eidos*, form] Brittle-stars, Sand-stars: a division of Echinodermata, having a flat body, with long and slender arms.

Ophrys, (ō'fris). [Gk. *ophrys*, eyebrow.] An herb belonging to Orchidaceæ, *q v.* *O apifera* = Bee-orchis. *O. aranifera* = Spider-orchis. *O muscifera*=Fly-orchis.

Ophthalmia, (of-thal'mi-a). [Gk. *ophthalmos*, eye] A diseased condition of the eye.

Ophthalmic, (of-thal'mik). [Gk. *opthalmos*, eye.] *O artery*: termination of internal carotid artery, serving the eye. *O nerve*: a division of the trigeminal nerve itself subdivided into the nasal and lachrymal nerves

Ophthalmoscope, (of-thal'mo-skōp) [Gk. *ophthalmos*, eye; *skopeo*, I view.] An instrument for the examination of the structure and condition of the eye, by concentrating on it the light of a lamp, by means of a lens

Opiammon, (ō-pi-am'mon). [*Opianic* and *Ammonium*, *q.v.*] $C_{20}H_{19}NO_8$: an amide-like compound obtained from opianate of ammonium.

Opianic acid, (ō-pi-an'ik). [Opium.]= $C_{10}H_{10}O_5$: found in Narcotine.

Opianine, (ō'pi-a-nin) [Opium, *q.v.*] An organic base from opium.

Opianyl, (ō'pi-a-nil) [Opianic, *q.v.*] $C_{10}H_9O_4$: the radicle of opianic acid.

Opisthobranchiata, (ō-pis-thō-brang-ki-ā'ta). [Gk. *opisthe*, behind, *brachion*, gill.]=Sea-slugs: a sub-division of Branchio-Gasteropoda, *q.v.*

Opisthocœlia, (ō-pis-thō-sē'li-a). [Gk. *opisthe*, behind; *koilos*, hollow] Crocodiles, known only by fossil remains: named from the anterior vertebræ being concave behind.

Opisthocomus, (ō-pis-thok'o-mus). [Gk. *opisthe*, behind; *kome*, hair.] Crested-pheasant; a gallinaceous bird of Brazil.

Opisthodelphys, (ō-pis-thō-delf'is). [Gk. *opisthe*, behind: *adelphos*, brother.] A tree-frog with dorsal egg-pouch: found in America.

Opisthotic, (ō-pis-thot'ik). [Gk. *opisthe*, behind, *ous*, ear] A bony portion of the auditory capsule.

Opium, (ō'pi-um) [The Latin name.] The dried juice of the white poppy: a body of very compound character. *O. poppy* = Papaver somniferum. *Tincture of O* = Laudanum. *O. alkaloids*=Morphia, codeia, papaverine, &c., *q v.*

Oporobia, (ō-po-ro'bi-a). *O. dilatata*=November moth.

Oposin, (ō'pos-in). An albuminous substance obtained from flesh

Opossum, (o-pos'sum). [*Opassom*, the Indian name.] = Didelphis, &c.: a marsupial animal, found only in America. *Vulpine O* =Phalangista vulpina. *O. shrimps*= Mysis.


Opossum.

Opposition, (op-pō-zish'un). [L. *oppono*, I place opposite to] A planet is in opposition when it and the sun are on opposite sides of the earth in the same straight line with it.

Opsaisthenios, (op-sis-then'iks). [Gk. *ops*, eye, *aisthesis*, feeling.] = Eye-sensations: sight

Opsimose, (op'si-mōs). [Gk. *opsimos*, late.] =Klipsteinite: a mineral.

Optic, (op'tik). *Optikos*, the Greek word] *O axis*: the straight line joining the centres of the eye, and of any object immediately in front of it. *O. angle*: the angle between the axes of the two eyes *O. lobes*: the portion of the brain from which the optic nerve proceeds. *O. nerves*: the second pair of cerebral nerves, which terminate in the retina of the eyes: not properly nerves, but rather processes of the brain, ending in red and yellow knobs. *O. thalami*: masses of nervous matter in the brain. *O. tracts*: unite to form the optic nerves.

Optical=Optic, *q v.* *O. couple*: *v.* Couple.

Optics, (op'tiks) [Gk. *optikos*, relating to the sight.] The science of the nature and laws of the phenomena of vision, including the construction of optical instruments, such as the telescope, microscope, &c

Optometer, (op-tom'e-ter). [Optics and Meter, *q.v.*] An instrument for the measurement of the distance of distinct vision for any given person.

Opuntia, (ō-pun'shi-a.) [Opuntus, a town in Greece.] Indian figs=Cactus opuntia: plants belonging to Cactaceæ.

Orach, (or'ak)= Atriplex, a plant belonging to Chenopodaceæ. *Halimus O.*=Tree purstane.

Orange, (or'anj). [*Naranj*, the Arabic name] =Citrus aurantium. A plant belonging to Aurantiaceæ, which flowers all the year round in Brazil. *Bergamot O* =Citrus bergamia. *Mandarin O.*=Citrus nobilis. *Quito O.* = Fruit of Solanum. *O. lily*=Lilium bulbiferum. *O. red stars*=Betelgeuse, Pollux, &c. *O. pigments* = Ochre, chromium, lead, chalk, and compounds of these. *O. tip butterfly*=Anthocharis cardamines.


Orange.

Orangite, (or'an-jit)=Thorite, *q v.*

Orang-utan, (ō-rang'ō-tang'). [Malay, *outang*,

wild; *orang*, man.]=Orang-outang=Simia satyrus: a gibbon, four feet high, with bulky body, feet longer than hands, arms reaching to ankle; thumb and great toes short Lives in forest trees of Borneo and Sumatra. *Agile O* = Hylobates agilis. *Gray O* = Hylobates leuciscus.


Orang-outang

Orbicella, (or-bi-sel'la). [L. *orbis*, circle.] *O cavernosa:* a coral polyp, usually budding in all directions, so as to form a hemisphere.

Orbicula, (or-bik'ū-la) [L. *orbiculus*, a small circle.] A genus of Brachiopoda.

Orbit, (or'bit). [L. *orbita*, track.] 1. The path in which a secondary planet travels round its primary, or the path of a planet round the sun. 2. The cavity of the eye

Orbitolites, (or-bit-ō-lī'tez). [L *orbis*, circle] Animals belonging to Rhizopoda, found in Tertiary rocks, and still extant.

Orbitosphenoid, (or-bit-ō-sfē'noid). [Orbit, *q v.*; Gk. *sphen*, wedge; *eidos*, form.] A part of the third cranial segment, forming the back of the orbit: in man the lesser wings of the sphenoid bone, which in Ruminantia become the greater wings.

Orbulina, (or-bū-lī'na). [L *orbis*, a circle] *O. universa:* a foraminifera in the form of a small perforated sphere, found at the bottom of the Atlantic

Orcein, (or'se-in). [Orcin, *q.v*]=$C_7H_7NO_3$: a red colouring matter obtained from lichen= Orcin and oxygen.

Orchard, (or'cherd). [A.-S. *wyrt*, herb; *geard*, yard.] A fruit garden. *O. oriole*=Bob-o-link=Xanthornis varius.

Orchall=Orchilla, *q v.*

Orchidaceæ, (or-ki-dā'se-ē). [Orchis, *q.v.*]= Orchids: common herbaceous shrubs, with flowers of very varied and often grotesque shapes, belonging to Orchidales.

Orchidales, (or-ki-dā'lēz). [Orchis, *q.v.*] Orchids, &c.. plants forming a division of Endogens.

Orchil=Orchilla, *q.v.*

Orchilla, (or-chil'la). [The Spanish name.] =Roccella tinctoria: a grey lichen, found on the rocks in Cape Verd Islands, from which a purple dye, Archil, *q.v.*, is obtained.

Orchis, (or'kis). [The Latin name.] A plant, the type of Orchidaceæ, *q.v. Bee O* =Ophrys apifera. *Bird's nest O.*= Listera nidus avis. *Bog O.* = Malaxis paludosa. *Butterfly O.* = Habenaria bifolia. *Dwarf O.* = O. ustulata. *Fen O* =Liparis Lœselii. *Fly O.*= Ophrys muscifera. *Fool's O* =O. Morio. *Frog O.*= Habenaria viridis. *Lizard O.* = O. hircina. *Man O.*=Aceras. *Marsh O.* = O. latifolia. *Meadow O* = O. morio. *Monkey O.*=O. simia. *Musk O.*=Herminium. *Purple O.*=O. mascula. *Spider O.*= Ophrys aranifera. *Spotted O.*=O. maculata.


Orchis.

Orcin, (or'sin). [The French word.]=$C_7H_8O_2$: a sweet crystalline substance, obtained from various varieties of lichen.

Order, (or'der). [L *ordo*, arrangement] 1. The arrangement and decoration of a column and entablature—

Entablature = { architrave. frieze. cornice. }

Column = { capital. shaft. base. }

The orders are said to be Composite, Corinthian, Doric, Ionic, or Tuscan, according to the proportions and the ornamentation, especially of the capital. 2. A sub-division of Class, *v* Orders.

Orders, (or'derz). [Order, *q.v.*] Sub-divisions of classes, in the classification of animals and plants, *v.* Tables No orders of plants are known entirely fossil. Sometimes used as=family and as=tribe.

Ordinary ray, *v* Refraction.

Ordinate, (or'di-nāt). [L. *ordinatus*, ordered] A line drawn perpendicular to one of the axes of a curve. *O of a conic section*= Latus rectum, *q.v.*

Ordnance, (ord'nans) Heavy artillery: guns, mortars, and howitzers, divided into smooth bore and rifled, and the latter into breech loaders and muzzle loaders. *O. survey:* a survey of the country carried out by the Ordnance Department, the maps of which are issued on a scale of 1 inch to a mile, and also of 6 inches.

Ore, (or). [*Or*, the A.-S. name.] A general term for combinations of metals and earthy and other matters: mineral substances containing metal *E.g Goose-dung O.*=Ganomatite. *Needle O v.* Needle ore. *Prismatic Iron O* =Brown oxide of iron.

Oreas, (or-ē'as). [L. *oreas*, mountain nymph.] *O canna*=Eland.

Orellin, (or-el'lin). [Orellana.] A yellow colouring matter obtained from the seeds of Bixa orellana.

Oreodaphne, (or-e-ō-daf'ne). [Gk. *oreios*, mountainous; *daphne*, laurel.] Mountain-laurel: a plant belonging to Lauraceæ.

Oreotrochilus, (or-e-ō-trok'i-lus). [Gk. *oreios*, mountainous; Trochilus, *q.v.*] A humming-bird. *v.* Humming-birds.

Organ, (or'gan). [*Organum*, the Latin word] 1. A part of a living body having a function to fulfil. *cf.* Member, *v.* Organs. 2. An arrangement of pipes, on a large scale, adapted to the production of musical sounds. *O. coral*=Tubipora musica. *O fish*=Drum= Pogonais: a fish which makes a loud singing noise, found in Borneo.

Organic, (or-gan'ik). [Organ, *q.v.*] *O. acids*=O. substances forming salts with bases: Monobasic, dibasic, tribasic, or polybasic, according as they contain one, two, three, or many atoms of replaceable hydrogen. *O. alkalies*=O.

bases, *q.v.* *O. analysis:* usually by combustion of the contained carbon, and by conversion of contained nitrogen into ammonia. *O. bases*=Organic alkalies: obtained chiefly from vegetables, *v.* Alkaloids. *Ammonia O. B.*, derived from ammonia, and volatile, resembling ammonia. *Ammonium O. B.* derived from ammonia, but fixed, resembling ammonium. *Animal O B.:* of animal origin: radicles composed of carbon, hydrogen, nitrogen, and oxygen, with other substances, such as phosphorus, &c. *Artificial O. B.*, those formed by distillation, reduction, substitution, or direct combination. *Natural O B.* mostly found in plants, and generally alkaline. *Primary O. B.*=Amide B.=Amidogen B., *q.v.* *Secondary O B.*=Imide B = Imidogen B., *q.v.* *Tertiary O. B.*=Nitrile B., *q.v.* *Vegetable O. B.* = Radicles of CH and O. *O. chemistry* = Chemistry of compound radicals = Chemistry of carbon compounds. The chemistry of compounds derived from organic substances, some of which may also be formed by synthesis. *O. compounds* consist chiefly of CHON: frequently of complex composition with very varied characters and properties; usually unsymmetrical. *O radicles: v.* Radicles. *O. remains*=Fossils, *q.v.*, also called petrifactions. *O. world*=All animals and vegetables=all organised bodies.

Organised bodies. Living organisms: usually unstable chemical composition; are not producible by synthesis.

Organogeny, (or-gan-oj'e-ni). [Gk. *organon*, organ; *gennao*, I produce.] Development of living organisms.

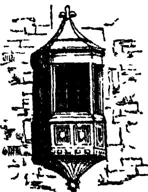
Organo-metallic compounds: of metals and organic radicles. *E.g.:* zinc-methyl, zinc-ethyl, &c. Have energetic chemical action, and sometimes act as compound radicles.

Organs, (or'ganz). *O. of alimentation:* mouth, stomach, intestines: which convert food into nutriment. *O of circulation:* heart and blood vessels generally: which distribute the nutritious matter derived from food to the various parts of the body. *O. of excretion:* lungs, kidneys, skin, &c., by which the waste products of the body are passed out. *O. of locomotion:* cilia and muscles. *Rudimentary O.:* those that are essentially useless; often seen only in the embryo; probably have decayed from disuse: as wings of island-birds, eyes of cave-animals, &c. *E.g.:* mammæ in male mammalia; one lobe of the lungs in snakes; upper teeth in calves, &c.

Or graphique = Sylvanite, *q.v.*

Oribatidæ, (or-i-bat'i-dē) = Wood-mites: small spider-like animals, belonging to Acarina, live on moss and herbs.

Orichalcit=Aurichalcite, *q.v.*



Oriel-Window.

Oriel-window, (ō'ri-el). A bay window projecting from an upper story of a building.

Oriental, (ō-ri-en'tal). [L. *orient*, eastern.] *O. emerald*=A variety of Sapphire. *O. garnet* =Almandite.

Orientation, (ō-ri-en-tā'shun). [L. *orient*, eastern.] A sense of polarity: the determination of the points of the compass; also used of animals who are able to retrace a road and find their way back.

Origanum, (ō-rig'a-num). [Gk. *orys*, hill; *ganos*, joy.]=Marjoram: a fragrant herb belonging to Lamiaceæ.

Origma, (ō-rig'ma)=Rock-warbler=Saxicola solitaria, *q.v.*

O'Rileyite=Native arsenite.

Orillon, (o-ril'on). [F. *oreillon*, ear.] A projecting tower at the angle of a bastion.

Orinoco, (or-i-nō'kō). *O. tobacco*=Nicotiana macrophylla.

Oriole, (ō'ri-ōl). [Oriolus, *q.v.*] A tropical thrush-like bird, belonging to Merulidæ, of which there are several genera: Oriolus, Yphantes, Xanthornis, Cacicus, &c. *v.* Oriolus. *Baltimore O.*= Hanging-bird= Golden-robin.



Oriole.

Oriolus, (ō-ri-ō'lus). [L. *aureolus*, golden.] Oriole: a migratory, gaily-coloured, sparrow-like bird, with long beak, belonging to Merulidæ, feeding on insects and berries, visiting England only in summer; builds concealed open nest. *O. galbula*=Golden oriole. *O. monachus*=Nun-thrush.

Orion. The most brilliant of the constellations, visible from every part of the globe. *Trapezium of O:* formed by the stars Betelgeuse, Bellatrix, Rigel, and a fourth. *O's belt:* also called Three Kings, Golden Yard, and Jacob's Staff: contains the three bright stars Alnitak, Alnilam, and Mintaka. *Nebula of O.:* one of the finest nebulæ known, below the sword belt of Orion, the centre being the star θ Orionis.

Ornithite, (or'ni-thīt)=Metabrushite: a mineral, chiefly phosphate of calcium.

Ornithichnites, (or-nith-ik-nī'tēz). [Gk. *ornis*, bird, *ichnos*, footstep.] Footmarks of birds. *v.* Lithichnozoa.

Ornithocephalus, (or-nith-ō-sef'al-us). [Gk. *ornis*, bird, *kephale*, head.]=Pterodactyle, *q.v.*

Ornithodelphia, (or-nith-ō-delf'i-a). [Gk. *ornis*, bird; *delphys*, womb.]=Monotremata, *q.v.*: a primary division of Mammalia, including only the Ornithorhynchus and Echidna; have no true teeth, but one passage for the urinary, genital, and intestinal products; and only a small corpus callosum.

Ornithogalum, (or-nith-og'a-lum). [Gk. *ornis*, bird; *gala*, milk.]=Star of Bethlehem: a plant, with linear leaves, belonging to Liliaceæ.

Ornithoglossum, (or-nith-ō-glos'sum). [Gk. *ornis*, bird; *glossa*, tongue.]=Bird's tongue: a plant belonging to Melanthaceæ.

Ornithoid, (or'ni-thoid). [Gk. *ornis*, bird; *eidos*, form.] Bird-like animals, known only by fossil footmarks and other tracks. *v.* Lithichnozoa. *O. lizards*=*O. Batrachians*. *O. marsupialia*=Anomæpus.

Ornithology, (or-ni-thol'o-ji). [Gk. *ornis*, bird; *logos*, discourse.] The division of the science of zoology which relates to birds.

Ornithopus, (or-nith'o-pus). [Gk. *ornis*, bird, *pous*, foot.] 1. Bird's-foot trefoil: an herb, belonging to Fabaceæ, named from the form of the fruits. 2. A bird, known only by fossil footmarks. *v.* Lithichnozoa.

Ornithorhynchus, (or-nith-ō-ring'kus). [Gk. *ornis*, bird; *rhygchos*, beak.]=Duck-billed Platypus = Water-mole = Duck-mole: an aquatic animal, found in Australia, having the form of a quadruped, covered with hair, having spurs like a fowl, and a mouth like the beak of a duck. graduates towards reptiles.

Ornithosauria, (or-nith-ō-saw'ri-a). [Gk. *ornis*, bird; *sauros*, lizard.] = Pterosauria: reptiles related to birds; regarded as a primary division of Vertebrata.

Ornithotomy, (or-nith-ot'o-mi). [Gk. *ornis*, bird; *tome*, section.]=Anatomy of birds. *v.* Zootomy.

Ornus, (or'nus). [The Latin name.] Flowering-ash: a plant belonging to Oleaceæ. *O. rotundifolia*=Manna-ash.

Orobanchaceæ, (or-ō-bang-kā're-ē). [Orobanche.]=Broom-rapes: leafless herbs, parasitic upon roots. belonging to Gentianales.

Orobanche, (or-ō-bang'ke)) [Gk. *orobos*, vetch; *agcho*, I strangle.]=Broom-rape: the type of Orobanchaceæ, *q.v.*

Orontiaceæ,(or-on-ti-ā'se-ē)=Orontiads: herbs, some stemless, with broad leaves, belonging to Juncales.

Orobus, (or'o-bus). [Gk. *oro*, I stimulate, *boos*, ox.]=Bitter-vetch: a plant belonging to Leguminaceæ.

Orographical, (ō-rō-graf'i-kal). [Gk. *oros*, mountain; *grapho*, I write.] Relating to the description of mountains. *O. map*=Map of mountainous districts.

Orphanozoa, (or-fan-ō-zō'a). [Gk. *orphanos*, orphan, *zoon*, animal.] Ehrenberg's term for Amphibia and fishes, which take no care of their young.

Orphean warbler=Sylvia orphea: a song bird belonging to Insessores; rare in England.

Orpiment, (or'pi-ment). [L. *aurum*, of gold; *pigmentum*, paint.] = Yellow sulphide of arsenic=As_2S_3: used for colouring: a yellow, translucent mineral, crystallising in rhombs, belonging to the arsenic group.

Orpine, (or'pin)= Sedum: a succulent herb belonging to Crassulaceæ.

Orrery, (or're-ri). [The Earl of Orrery.] An apparatus for showing the relative sizes, motions, and positions of the sun and planets, including the earth.

Orris, (or'ris). [Corruption of Iris.]=Iris, *q.v.*

Orsellic acid, (or-sel'lik). [*Orsella*, a lichen.] =Lecanoric acid, *q.v.*

Orthagorisca, (or-tha-go-ris'ka). *O. mola*= Molebut: a variety of the sunfish.

Orthidæ, (or'thi-dē) Orthis, *q.v.*; *eidos*, form.] A family of molluscs, belonging to Brachiopoda.

Orthis, (or'this). [Gk. *orthos*, straight.] A genus of Brachiopoda: found fossil, very abundantly, in Silurian rocks.

Orthite, (or'thit). [Gk. *orthos*, straight.] A brittle mineral, chiefly silicate of aluminum, iron, &c., also called Allanite.

Orthocephali, (or-thō-sef'a-li). [Gk. *orthos*, straight; *kephale*, head.] = Middle-headed: having the breadth of the head $\frac{4}{5}$ths of the length. *cf.* Dolichocephalic and brachycephalic.

Orthoceras, (or-thō'ser-as). [Gk. *orthos*, straight, *keras*, horn.] A cephalopod, characteristic of Llandeilo-flag rocks. named from its form.

Orthoclase, (or-thō'klāz). [Gk *orthos*, straight; *klasis*, fracture.] A transparent mineral, of which there are many varieties, belonging to the felspar group, found in granite, gneiss, &c.: chiefly silicate of aluminum and potassium. Obsidian, pitchstone, porphyry, trachyte, are varieties of O. *v.* Hardness and Fusibility.

Orthoclastic, (or-thō-klas'tik). [Gk. *orthos*, straight; *klasis*, fracture.] O. minerals have right-angled cleavage.

Orthogonal, (or-thog'on-al). [Gk. *orthos*, right; *gonia*, angle.] Perpendicular: right-angled. *O. system:* two surfaces belonging to this system when the principal tangents correspond.

Orthographic, (or-thō-graf'ik). [Gk. *orthos*, correct, *grapho*, I write.] *O. projection: v.* Projection.

Orthophosphates. *v* Phosphates

Orthophosphoric acid, (or-thō-fos-for'ik). [Gk. *orthos*, right; Phosphoric, *q.v.*]=H_3PO_4= Ordinary phosphoric acid=Tribasic P. A.= Trihydric phosphate.

Orthoptera, (or-thop'ter-a). [Gk. *orthos*, straight, *pteron*, wing.] Cockroaches, grasshoppers, &c.: terrestrial, voracious, herbivorous insects, undergoing incomplete metamorphosis, forming a primary division of insects: have soft leathery elytra, cannot fold the wings crossways. The males are all musical.

Classification of O.—
Cursoria=Runners.
Raptoria=Snatchers.
Ambulatoria=Walkers.
Saltatoria=Jumpers.

Orthorhombic, (or-thō-rom'bic). [Gk. *orthos*, straight; Rhombus, *q.v.*] *O. system:* in mineralogy = Rectangular system = Prismatic=Trimetric: in which the three axes are unequal, and intersect at right angles.

Orthorhynchus, (or-thō-ring'kus) [Gk. *orthos*, straight; *rhygchos*, beak.] Giant humming-bird; a sparrow-like bird. *v.* Trochilidæ.

Orthose=Orthoclase, *q.v.*

Orthosilicates. *v.* Silicates.

Orthostichies, (or-thō-stik'i-ēz). [Gk. *orthos*, straight; *stichos*, row.] Straight-rows.

Orthotropous, (or-thot'rō-pus). [Gk. *orthos*,

straight; *trope*, turning.] Turned in the right direction: used especially of a seed in which the foramen is opposite to the hilum.

Ortolan, (or'tō-lan). [The French name.] A singing bird, belonging to Fringillidæ.

Ortyx, (or'tiks). An American bird, corresponding to the quail of the Old World.

Orycteropus, (or-ik-ter'o-pus). [Gk. *orykter*, digger; *pous*, foot.] A rat-like animal, belonging to Edentata. *O. Capensis*: Cape ant-eater; also called ground-hog and aardvark.

Oryctology, (or-ik-tol'ō-ji). [Gk. *oryktos*, dug up; *logos*, discourse.] The branch of geology which treats of fossils.

Oryx, (ō'riks). A variety of the antelope = Antilope oryx; also called gems-boc: found in South Africa.


Oryx.

Oryza, (ō-ri'za). [The Greek name.] A plant belonging to Glumaceæ. *O. sativa* = Rice.

Os, (os). [The Latin word.] = Bone: *O. articulare*, v. Malleus. *O. calcis*=Calcaneum: the bone of the heel. *O. hyoid* = Hyoid bone, in fishes. *O. innominatum* = Haunch = hip-bone: a large bone fastened to the sacrum, and having a socket in which the thigh bone fits: composed of ilium, pubis, and ischium. *O. quadratum*, v. Malleus.

Osage-orange=Maclura aurantiaca: a plant belonging to Moraceæ.

Osborne series, (oz'born). [O. Isle of Wight.] =St. Helen's series: fresh-water beds belonging to Upper Eocene.

Oscillating, (os-sil-lā'ting). [L. *oscillo*, I swing.] *O. engine*: one in which the cylinder oscillates.

Oscillation, (os-sil-lā'shun). [L. *oscillo*, I swing.] Vibration. *Angular O.* = Gyration.

Oscula, (os'kū-la). [L. *osculum*, small mouth.] Small openings or mouths.

Osculation, (os-kū-lā'shun). [L. *osculum*, little mouth.]=Contact.

Ose, (ōs). A termination in organic chemistry, used for sugars. *E.g.* sucrose, lactose, &c.

Osier, (ō'zhi-er). [The French name.]=Salix viminalis: a willow-like plant, belonging to Salicaceæ.

Osion. A termination. *v.* Oxion.

Osmazome, (oz'ma-zōm). [Gk *osme*, smell; *zomos*, juice.] An extract of flesh, of which creatine is a constituent.

Osmelite, (oz'me-lit)=Pectolite.

Osmic acid, (oz'mik). [Osmium, *q.v.*] OsO_4: now called tetroxide of osmium.

Osmiridium, (oz-mi-rid'i-um). [Osmium and Iridium, *q.v.*] = Iridosmine: an alloy of osmium and iridium.

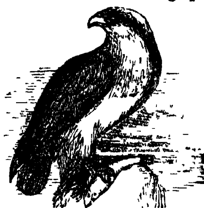
Osmium, (oz'mi-um). [Gk. *osme*, odour.]= Os: one of the noble metals; the least fusible of all the metals.

Osmose, (os'mōz). [Gk. *osmos*, an impulse.] Penetration of porous vessels by liquids.

Osmunda, (os-mun'da). [Osmunder, one of the names of Thor.]=Fern-royal=flowering fern: a plant belonging to Polypodiaceæ.

Osmundaceæ, (os-mun-dā'se-ē). [Osmunda, *q.v.*] A sub-division of ferns. *v.* Filices.

Osprey, (os'prā). [Corruption of Ossifrage.]= Fishing eagle = Falco haliætus= Pandion haliætus: a bird of prey; also called Bald-buzzard.


Osprey.

Ossein, (os'se-in) [L. *osseus*, bony.] Bone cartilage: a gelatinous tissue.

Osseus, (os'e-us.) [The Latin word.] *O. bony fishes*: bony fishes = Teleostei, *q.v.*

Ossicles, (os'si-klz). [L. *ossiculum*, small bone.] Auditory ossicles: the stapes, malleus, and incus three small bones in the ear.

Ossicula, (os-sik'ū-la). [L. *ossiculum*, small bone.] A general term for small bones.

Ossification, (os-sif-i-kā'shun). The formation of bone, from cartilage or fibrous tissue.

Osteocolla, (os-tē-ō-kol'la). [Gk. *osteon*, bone; *kolla*, glue.] 1. A variety of calc tufa. 2. A glue obtained from bones.

Osteolepis, (os-te-ol'e-pis). [Gk. *osteon*, bone; *lepis*, scale.] A ganoid fish, known by fossil remains found in the Old Red Sandstone.

Osteolite, (os'te-ō-lit). [Gk. *osteon*, bone; *lithos*, stone.]=Apatite: a mineral, chiefly phosphate and chlorate of lime: an altered variety of apatite.

Osteozoa, (os-te-ō-zō'a). [Gk. *osteon*, bone; *zoon*, animal.] Burmeister's term for Vertebrata.

Osteozoaria, (os-te-ō-zō-ā'ria) [Gk *osteon*, bone, *zoon*, animal.] In De Blainville's and Milne Edwards's classifications=Vertebrata.

Ostracoda, (os-trā'ko-da). [Gk. *ostrakon*, shell; *eidos*, like.] Small crustaceans, with hinged bivalve carapace, and branchiæ attached to jaws: found fossil from Lower Cambrian to recent rocks.

Ostracoderma, (os-trā'ko-der-ma). [Gk. *ostrakon*, shell; *derma*, skin.] 1. A genus of plants belonging to Fungales. 2. An animal belonging to Crustacea. 3. Burmeister's term for a division of Crustacea, including Cirripedia, Rotatoria, &c.

Ostraciontidæ, (os-trā-si-on'ti-dē). [Gk. *ostrakon*, shell; *eidos*, form.] Trunk-fishes, *q.v.*: fishes belonging to Plectognathi.

Ostracostei, (os'trā-kos'te-ī). [Gk. *ostrakon*, shell.] Placoganoid fishes, having the head and fore part of body encased in ganoid plates; extinct since Devonian period; include Pterichthys, Pteraspis, Cephalaspis, &c.

Ostranite, (os'tra-nit)=Zircon, *q.v.*

Ostrea, (os'tre-a). [The Latin name.] Oyster: a molluscous animal, belonging to Pectinidæ, of which there are many fossil varieties.

Ostrich, (os'trich). [*Autruche*, the French name.]=Struthio: a large land bird: with short wings, the type of Struthionidæ. Analogous to the rhea of America, and the emu and cassowary of Australia. *African O.*=Struthio camelus. *American O.*=Rhea.


Ostrich

Ostrya, (os'tri-a). [Gk. *ostryos*, scale.]=Hop-hornbeam: a plant belonging to Corylaceæ.

Osyckanis. An African people.

Otaria, (ō-târ'i-a). [Gk. *otarion*, small ear.] Sea-bear: a marine carnivorous animal, belonging to Phocidæ, named from its external ears. *O. jubata*=Sea-lion. *O. priscilla*=Cape eared-seal.

Othyl, (oth'il)=Acetyl, *q.v.*

Otidæ, (ō'ti-dē). [Otis, *q.v.*, Gk. *eidos*, form.] =Bustards: land birds belonging to Pressirostres.

Otis, (ō'tis). [The Latin name.] Bustard: a poultry-like bird the type of Otidæ.

Otoconium, (ot-ō-kō'ni-um). [Gk. *ous*, ear; *konis*, dust.] = Ear-dust: in the human ear.

Otocrane, (ot'ō-krān). [Gk. *ous*, ear, Cranium, *q.v.*] The open bony chamber of the ear in fishes.

Otolicnos, (ot-ō-lix'nos)=Galago: a half-ape, found in Africa, remarkable for its activity.

Otolithic, (ot-ō-lith'ik). [Gk. *ous*, ear, *lithos*, stone.] *O. stones:* small bones in the ears of fishes, and in auditory sacs of invertebrate animals. *cf.* Otoconium. *O. vesicle:* organ of hearing in Medusæ.

Otoliths, (ot'ō-liths). [Gk. *ous*, ear; *lithos*, stone.] Small bones in the ear, contained in the *membranous labyrinth;* a kind of rattle in the organ of hearing of some fishes and cephalopods.

Otopteris, (ot-op'ter-is). [Gk. *ous*, ear; *pteron*, wing.] A plant known only by fossil remains.

Otozoum, (ot-ō-zō'um). [Gk. *otos*, giant; *zoon*, animal.] A frog-like animal, known only by its fossil track. *v.* Lithichnozoa.

Otter, (ot'ter). [*Oter*, the A.-S. name.]= Lutra, *q.v.*; also=Mustela, *q.v.* *Canada O.*=Lutra Canadensis. *Marsh O.*=Mustela vison. *Sea O.*=Lutra marina: intermediate between seals and otters. *O. sheep*=Ancon sheep.

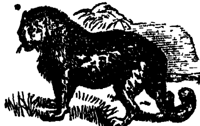

Otter.

Ottrelite, (ot'tre-līt)=Phyllite.

Otus, (ō'tus). [Gk. *ous*, ear.] Long-eared owl: a bird belonging to Strigidæ.

Oudenodon, (ō-den'ō-don). [Gk. *ouden*, none; *odous*, tooth.] A genus of Dicynodontia, *q.v.*: an extinct reptile.

Ounce, (ouns). [1. *Once*, the French name. 2 L. *uncia*, twelfth part.] 1. =Felis. 2. A weight: in avoirdupois weight= 437½ grains; in troy and apothecaries weight = 480 grains.


Ounce

Ourang. *v.* Orang.

Ousaisthenics, (ō-sās-then'iks). [Gk. *ous*, ear; *aisthenics*, sensation.] Ear-sensations.

Oustitis, (ōs-ti-tis)=Simia Jacchus = Hapale: a small American monkey.

Outcrop=Bassett. that part of an inclined stratum which comes to the surface.

Outer-strakes=Raised strakes. *v.* Strakes.

Ova, (ō'va). [L. *ovum*, egg.] Plural of ovum, *q.v.*

Oval, (ō'val). [L. *ovum*, egg.] Egg-shaped; elliptic.

Ovalbumin, (ō-val-bū'min). [Ovum and Albumin, *q.v.*] A variety of albumin found in white of egg.

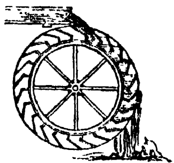
Ovaries, (ō'va-riz). [Ovary, *q.v.*] Plural of ovary, *q.v.*

Ovary, (ō'var-i). [*Ovarium*, the Latin word.] The cavity of a carpel, which contains the seeds; a general term for the enclosure of the fœtus in viviparous animals. *O. of fish*= Roe.

Oven-bird = Furnarius filiginosus: a small insectivorous bird found on river banks.

Over-grown=Hypertrophied.

Overshot-wheel. A water-wheel turned by the fall of water upon its circumference; used for small streams of considerable fall.


Overshot-wheel.

Overtones, (ō'ver tōnz). Harmonic sounds: higher notes also produced when any musical note is sounded. *v.* Tones.

Ovibos, (ō-vi-bos). An animal belonging to Bovidæ. *O. moschatus*=Musk-ox.

Oviducts, (ō'vi-dukts). [L. *ovum*, egg; *ductus*, duct.]=Fallopian tubes, *q.v.*

Oviforme, (ō'vi-form)=Egg-like.

Ovipara. De Blainville's term for birds, reptiles, amphibia, and fishes.

Oviparous, (ō-vip'a-rus). [L. *ovum*, egg; *pario*, I produce.] Bringing forth offspring in a shell, which is detached from the parent before any considerable degree of development: as with birds, insects, mollusca, arachnida, &c.

Oviposition, (ō-vi-pō-zish'un). [L. *ovum*, egg; *pono*, I place.] Deposition of eggs, as by insects, &c.

Ovoviviparous, (ō-vō-vī-vip'a-rus). [L. *ovum*, egg; *vivus*, alive; *pario*, I produce.]=Internal incubation: having the young in a shell, which is retained within the body until it is

hatched; intermediate between viviparous and oviparous; in scorpions.

Ovis, (ō'vis). [The Latin name]=Sheep *O. argalis*=Argal. *O. aries*=Common sheep. *Female sheep*=Ewe.

Ovules, (ō'vūlz). [L. *ovulum*, small egg.] Young seeds, also called seed buds.

Ovum, (ō'vum). [The Latin word] One of the two bodies employed in sexual reproduction; the total result of the development of one ovum is called an individual.

Owenite, (ō-we-nit). [Professor Owen.]= Thuringite, *q.v.*

Owen's classification of animals (made by Professor Owen) —

Vertebrata.
Articulata.
Mollusca.
Radiara.
Entozoa.
Infusoria.

Owl, (owl). [*Ule*, the A.-S. name.] A nocturnal bird. *Great O.*=Bubo maximus. *Hawk O.*= Strix surnia.



Owl.

Ox, (oks). [*Oxa*, the A.-S. name.]=Bos taurus: an animal belonging to Bovidæ. *Indian O.*= Bos Indicus. *O. tongue*=Helminthia. *O. eye daisy* =Chrysanthemum leucanthemum. *O. lip*=Primula elatior. *O. bird*: a snipe-like bird. *O. tongue*=Helminthia.

Oxalates, (oks'a-lāts). [Oxalis, *q.v.*] Salts of Oxalic acid.

Oxalhydric acid, (oks-al-hī'drik) = Saccharic acid, *q.v.*

Oxalic, (ok-sal'ik). [Oxalis, *q v.*] *O. acid*= Dihydric oxalate = $C_2H_2O_4$: a crystalline poisonous substance obtained from the leaves of the plant oxalis, from sugar, starch, &c., also from carbonic and acetic acids. *O. ether* = $(C_2H_5)_2C_2H_4$ = Diethyl oxalate=$C_6H_{10}O_4$: an odorous liquid. *O. series*=$C_nH_{2n-2}O_4$: a series of volatile acids, including oxalic and succinic acids.

Oxalidaceæ, (oks-al-i-dā'se-ē). [Oxalis, *q.v.*] =Oxalids: herbs and trees belonging to Geraniales; also called Hugoniaceæ.

Oxalis, (oks'a-lis). [Gk. *oxys*, sharp.]=Wood-sorrel: an herb, the type of Oxalidaceæ

Oxalite, (oks'a-lit). [Oxalis, *q.v.*]=Humboldtine: a mineral, chiefly oxalate of iron.

Oxalo-nitrile=Prussian blue.

Oxaluric, (oks-a-lū'rik). [*Oxalic* and *Uric*, *q.v.*] *O acid*=$C_3H_4N_2O_4$: a derivative of uric acid, which readily separates into oxalic acid and urea.

Oxamethane, (oks-a-meth'ān) = Oxamic ethane: a crystalline substance.

Oxamic acid, (oks'a-mik). [Oxamide, *q.v.*]= $C_2H_3NO_3$: one of the amidated acids. *O. ether*=Oxamethane.

Oxamide, (oks'a-mid). [Oxalis and Amide, *q.v.*]=$C_2H_4N_2O_2$: one of the diamides, a neutral, solid, powdery substance, from oxalic ether, &c.

Oxammite, (oks-am'mīt). Oxalate of ammonium: found in the stomach and vertebral column of birds.

Oxanilide, (oks-an'i-līd)=Diphenyl oxamide.

Oxanthracene, (oks-an'thrā'sēn). $C_{14}H_8O_2$: a crystalline substance obtained from anthracene.

Oxatyl, (oks'a-til)=CHO_2=Carboxyl: an organic radicle, assumed to be present in organic acids, of which it is supposed to be the acid principle.

Oxen, (oks'en). Plural of Ox, *q.v.*

Oxford clay. A bed, belonging to Middle Oolite, containing many fossil remains of Cephalopoda.

Oxidation, (oks-i-dā'shun). [Oxide, *q.v*] The combination of oxygen with a metal or other substance.

Oxides, (oks'īdz). [Oxygen, *q.v*] Compounds of oxygen and metals, or other substances which combine with it. 1. Basic oxides, which have the properties of bases. 2. Neutral oxides. 3. Anhydrides, *q.v.*

Suboxides: as Hg_2O.
Monoxides: as CaO: basic.
Sesquioxides: as Al_2O_3: basic in a feeble degree.
Dioxides: as BaO_2: sometimes acid, sometimes basic
Trioxides: as WO_3.
Anhydrides: as H_2O_5.

Oxidising flame, of blow pipe. The portion of the flame where complete combustion takes place; in which substances become oxidised

Oxion, (oks'i-on). [Oxygen, *q.v.*] The radicle of a salt: the non-metallic element, or equivalent compound, of hydrated acid, ending in *ic* =an anhydride and an atom of oxygen. If the acid end in *ous* the oxion is termed an osion.

Oxlip=Primula elatior.

Ox-tongue=Helminthia.

Oxyacids, (oks-i-as'ids). Formerly used for acids containing oxygen, to distinguish them from hydracids. *cf.* Hydracids.

Oxybenzamic acid=Benzamic acid, *q.v.*

Oxybutyric acid=Butylactic acid:

Oxycarbons, (oks-i-kār'bonz)=Carbon oxides.

Oxychlorides of acids = Chlorides of acid radicles.

Oxycoccos, (oks-i-kok'kos). [Gk. *oxys*, acid; *kokkos*, berry.]=Cranberry: a shrub belonging to Vacciniaceæ.

Oxygen, (ok'si-gen). [Gk. *oxys*, acid; *gennao*, I produce.]=O'': a colourless, tasteless, inodorous gas, heavier than the atmosphere, of which, as also of water, it is a constituent; essential to the life of nearly all animals: enters into combination with nearly all other substances, sometimes so violently as to cause combustion.

Oxyhydrogen light=Lime light: an intense light, produced by heating a ball of lime in a flame of hydrogen burning in oxygen.

Oxymuriatic acid, (oks-i-mū-ri-at'ik). An old

name used for Chlorine, on the assumption of its being a compound of oxygen and muriatic acid.

Oxyphenic acid, (oks-i-fē'nik)=$C_6H_6O_2$= Pyrocatechin: a substance derived from benzol by replacing two atoms of hydrogen by two atoms of hydroxyl.

Oxypicric acid, (oks-i-pik'rik)=Styphnic acid=Trinitroresorcin: obtained from sapan wood, &c.=$C_6H_3N_3O_8$.

Oxyria, (oks-ī'ri-a). [Gk. *oxys*, sharp.] Mountain-sorrel: a plant belonging to Polygonaceæ.

Oxysalts. Salts in which oxygen is an important constituent.

Oxysulphion, (oks-i-sulf'i-on). [*Oxygen*, *sulphur*, and *ion*, *q.v.*]=SO_4: one of the constituents of sulphate of potassium, which goes to the positive pole in galvanic decomposition of the salt: not known separately.

Oxytropis, (oks-it'ro-pis). [Gk. *oxys*, sharp; *tropis*, keel.] An herb belonging to Fabaceæ.

Oxyuris, (oks-i-ū'ris). [Gk. *oxys*, sharp; *oura*, tail.]=Thread-worm: a small worm-like animal belonging to Nematoidea.

Oyster, (oys'tėr) [*Ostrea*, the Latin name.] Ostrea: a bivalve molluscous animal, the type of Pectinidæ. *O. catcher*=Hæmatopus: a wading bird.

Ozarkite, (ō-zar'kīt)=Thomsonite.

Ozocerite, (ō-zō-sē'rit). [Gk. *ozeo*, I smell; *keros*, wax.]=Fossil wax: an inflammable mineral substance.

Ozone, (ō-zōn'). [Gk. *ozeo*, to be odorous.]= Electrified oxygen: oxygen in a modified and condensed form.

P.

Paca, (pā'ka). [The Portuguese name.]= Cavia paca= Cœlogenys: an animal belonging to Dasyprocta.



Paca.

Pachy-, (pak'i). [Gk. *pachys*, thick.] A prefix implying thickness.

Pachybatrachus, pak-i-ba-tra'kus). [Gk. *pachys*, thick; Batrachian, *q.v.*] A South American toad = Brachycephalus, *q.v.*

Pachydactylous, (pak-i-dak'ti-lus) [Gk. *pachys*, thick; *daktylos*, finger.] *P. Lithichnozoa*, thick-toed birds, known only by their footmarks. *v.* Lithichnozoa.

Pachydermata, (pak-i-dėr'ma-ta). [Gk. *pachys*, thick; *derma*, skin.] Pachyderms: elephant, rhinoceros, horse, pig, &c., a primary division of Mammalia; also regarded as a sub-division of Ungulata.

Packfong, (pak'fong). An alloy of copper, nickel, and zinc, resembling German silver.

Paddle-fish=Spatularia: a sturgeon-like fish.

Paddy. Rough rice in the husk.

Paddy-bird=Loxia oryzivora: named from eating rice.

Pæonia, (pē-ō'ni-a). [Gk. *pæon*, song of triumph.] Pæony: an herb, with large showy flowers, belonging to Ranunculaceæ.

Pagellus, (pa-jel'lus). [The Latin name.] Sea-bream; a fish belonging to Acanthopteri.

Pagoda, (pa-gō'da). [Hind. *boot-kuda*, idol-house.] A temple, built in stages of gradually diminished size, common in the East Indies and China.

Pagrus, (pag'rus). [The Latin name.]= Braize: a fish belonging to Acanthopteri.

Paguridæ, (pa-gū'ri-dē). [Pagurus, *q.v.*] Hermit-crabs = Robber-crabs: animals, belonging to Anomura, living in whelk shells.

Pagurus, (pa-gū'rus). [*Pagouras*, the Greek name.] Hermit-crab: the type of Paguridæ.

Paigle, (pā'gl). [F. *epingle*, pin.]=Primula veris: cowslip.

Painted. *P. lady*=Vanessa cardui. *P. snipes* =Rhynchæa: of which the males are more showy than females. *P. pheasant*=Phasianus pictus. *P. spur fowl*=Galloperdix lunulosa.

Painting, (pānt'ing). *Fresco P.*: on wet plaster, with colours mixed with water and lime. *Half-fresco*: on dry plaster. *Oil P.*: in which the pigments, transparent or opaque, are mixed with oil. *Distemper P.* =*Tempera*: painting with opaque colours mixed with size. *Water colour P.*: in which the colours are transparent and mixed with water.

Palæichthyes, (pā-lē-ik'thi-ēs). [Gk. *palaios*, ancient; *ichthys*, fish.] Name suggested for Ganoidei and Elasmobranchii: fishes having a contractile heart, and a spiral valve in intestines.

Palæocyclus, (pā-lē-ō-sī'klus). [Gk. *palaios*, ancient, *kyklos*, circle.] The only representatives of Aporosa corals in Silurian rocks.

Palæocyon, (pal-ē-os'i-on). [Gk. *palaios*, ancient, *kyon*, dog.]=Arctocyon, *q.v.*

Palæography, (pā-lē-og'ra-fi). [Gk. *palaios*, ancient; *grapho*, I write.] The art of deciphering ancient inscriptions.

Palæolithik, (pā-lē-ō-lith'ik). [Gk. *palaios*, ancient; *lithos*, stone.] *P. age*=Drift period: the oldest in which traces of man have been found; in which the rivers and valleys were somewhat different from now; and in which man was contemporary with the elephant, rhinoceros, and cave-bear, &c.

Palæoniscus, (pā-lē-ō-nis'kus). An heterocercal fish, fossil remains of which are found in Permian strata.

Palæontology, (pā-lė-on-tol'ō-ji). [Gk. *palaios*, ancient; *onta*, beings, *logos*, discourse.]= Palæophytology+Palæozoology: the science of fossil remains.

Palæophis, (pa-lē'of-is). [Gk. *palaios*, ancient; *ophis*, snake.] A snake, known only by fossil remains, found in Tertiary rocks.

Palæophytology, (pā-lē-ō-fi-tol'ō-ji) [Gk.

palaios, ancient· *phyton*, plant.] The branch of Palæontology which treats of fossil remains of plants.

Palæornis, (pal-ē-or'nis). [Gk. *palaios*, ancient, *ornis*, bird.] Ring-parrakeet: a bird belonging to Psittacinæ, of which there are many varieties.

Palæosaurus, (pā-lē-ō-saw'rus). [Gk. *palaios*, ancient· *sauros*, lizard.] A reptile, known by fossil remains, found in Permian rocks.

Palæospongia, (pā-lē-ō-spunj'i-a). [Gk. *palaios*, ancient.] A fossil sponge found in Lower Silurian rocks.

Palæotheridæ, (pā-lē-ō-ther'i-dē). [Palæotherium, *q.v.*] Animals resembling the Palæotherium, *q.v.*, range in size from a rabbit to a rhinoceros, having three toes to each foot.

Palæotherium, (pā-lē-ō-thē'ri-um). [Gk. *palaios*, ancient, *therion*, beast.] A tapir-like mammal, having canine teeth, known only by fossil remains found in Tertiary rocks.

Palæothrissum, (pal-ē-ō-thris'sum). [Gk. *palaios*, ancient; *thrix*, hair.]=Palæoniscus, *q.v.*

Palæozoic, (pā-lē-ō-zō'ik). [Gk. *palaios*, ancient, *zoon*, organic being.]=Primary: a general term applied to the older strata, from Cambrian to Permian inclusive.

Palæozoology, (pā-lē-ō-zō-ol'ō-ji). [Gk. *palaios*, ancient; Zoology, *q.v.*] The branch of Palæontology which treats of fossil remains of animals.

Palamedea, (pal-a-med'e-a)=Microdactylus: a goose-like bird adapted for arboreal life, having no webs on the feet; found in South America, also called screamer bird.

Palamopus, (pal-am'ō-pus). [Gk. *palame*, palm; *pous*, foot.] A frog-like animal, known only by its fossil tracks. *v.* Lithichnozoa.

Palate, (pal'āt). [*Palatus*, the Latin word.] =Roof of the mouth. *P. bones:* two vertical bones in the front of the skull, the lower ends of which turn in and meet over the roof of the mouth.

Palauchenia, (pā-lau-kē'ni-a). [Gk. *palaios*, ancient; Auchenia, *q.v.*] A large lama, known only by fossil remains, found in Quaternary strata in Mexico.

Palimpsest, (pāl'imp-sest). [*Palimpsestos*, the Greek word.] A parchment upon which a second inscription has been made, the first having been partially effaced.

Palinurus, (pal-in-ū'rus). [Classical.] Sea-crawfish: a crustacean animal.

Paliurus, (pal-i-ū'rus). [The Greek name.]= Christ's thorn: a plant belonging to Rhamnaceæ.

Palladamine, (pal-lā'da-min). [Palladium, *q.v.*]=PdH_6N_2O: an alkaline base.

Palladic, (pal-lā'dik). [Palladium, *q.v.*] Relating to palladium. *v.* Terminations, *ic.*

Palladious, (pal-lā'di-us). [Palladium, *q.v.*] *v.* Terminations, *ous.*

Palladium, (pal-lā'di-um). [Pallas.]=Pdiv: one of the noble metals, a rare, hard, white, ductile, tenacious metal, usually found as an alloy with iridium and platinum.

Pallas, (pal'las). [Classical.] No. 2 of the Minor Planets.

Pallial, (pal'li-al). [Pallium, *q.v.*] *P. line:* where the mantle joins the shells of bivalve mollusca.

Palliobranchiata, (pal-li-ō-brang-ki-ā'ta). [L. *pallium*, mantle; *branchiæ*, gills.]= Brachiopoda, *q.v.*: a name given to them on the hypothesis that they breathe by means of their mantles.

Palliser shot and shell, (pal'is-ser). Projectiles, with pointed heads, hardened by being cast in iron moulds.

Pallium, (pal'li-um). [L. *pallium*, cloak.] Mantle: the outer covering of a mollusc within the shell. In Brachiopoda the lobes of the P. correspond with the anterior and posterior parts of the body, in Lamellibranchiata with the right and left sides.

Palm, (pam) [*Palma*, the Latin name.] A tree, the type of Palmaceæ. *P. cabbage*= Areca. *P. oil:* from palm tree. *P. tree*= Maximiliana regia. *P. tree worm:* a thick fleshy worm found in the wood of the cabbage tree. *Doom P.*= Hyphæne.


Palm

Palmaceæ, (pal-mā'se-ē). [Palm, *q.v.*] = Palms: very tall trees, with terminal clusters of leaves, the type of Palmales, and giving flour, oil, salt, sugar, wax, and wine. cocoa-nut, date, oil-palm, cane-palm, &c., are varieties of the palm-tree: found fossil as far back as Secondary rocks.

Palma Christi = Castor Oil Plant = Ricinus communis.

Palmacites, (pal-ma'si-tēz). [Palm, *q.v.*] A fern, known only by fossil remains found in Carboniferous rocks; named from being at first supposed to be a palm.

Palmales, (pal-mā'lēz). [Palm, *q.v.*]=Palmaceæ, *q.v.* A division of Endogens.

Palmellaceæ, (pal-mel-lā'se-ē). [Palm, *q.v.*] Algæ bearing fruticose and filaceous lichens.

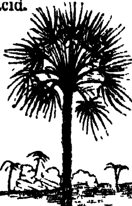
Palmitates, (pal'mi-tāts). [Palmitic, *q.v.*] Compounds of palmitic acid and bases.

Palmitic acid, (pal'mit-ik). [Palm oil, *q.v.*]= $C_{16}H_{32}O_2$: a white, fatty substance, from cocoa-nut and palm oil, butter, &c.; also called cetylic acid and ethalic acid.

Palmatin, (pal'mi-tin). [Palm oil, *q.v.*] = $C_{51}H_{98}O_6$: a fatty substance found in palm oil, bees'-wax, &c.

Palmetto, (pal-met'tō). [Palm, *q.v.*] The cabbage-palm; also found fossil in Eocene rocks, implying a warmer climate.

Palmityl, (pal'mi-til). [Palmitic, *q.v.*; Gk. *hyle*, material.] The radicle of the palmitic series.


Palmetto

Palmipedes, (pal'mi-pēdz). [*Palmipes*, the Latin word.] Geese, ducks, pelicans, albatross, &c : one of the primary divisions of birds in Milne-Edward's classification.

Palmyra, (pal-mī'ra). *P. palm* = Borassus flabelliformis.

Palpi, (pal'pi). [*Palpus*, the Latin word.] Feelers: small organs of touch.

Paludicellea, (pal-ū-di-sel'la). [L. *palus*, marsh.] Fresh-water Polyzoa: a sub-division of Gymnolæmata, *q.v.*

Paludina, (pal-ū-dī'na). [L. *palus*, marsh.] A fresh-water Gasteropod. *P. vivipara* = River snail

Pampas, (pam'paz). [Per. *pampa*, field.] Open plains of great extent in America.

Pampero, (pam-pā'ro) [Pampas, *q v*] A summer wind from the Andes blowing over the pampas of America.

Panax, (pā'naks). [Gk. *pan*, all; *akos*, remedy.]=Ginseng, *q.v.*

Pancreas, (pan'krē-as). [Gk. *pan*, all; *kreas*, flesh.] = Sweetbread: a soft white fleshy gland at the back of the stomach.

Pancreatic (pan-krē-at'ik). [Pancreas, *q v*] *P fluid*: a colourless alkaline secretion, which aids the digestion of fatty matter, secreted by the pancreas.

Panda, (pan'da)=Ailurus: a small bear-like animal found in the Himalayas

Pandæan, (pan-dē'an). [*Pan*, the god of flocks.] A wind musical instrument, consisting of a number of reeds graduated in size.

Pandanaceæ, (pan-da-nā'se-ē) [Pandanus, *q.v.*]=Screw-pines tropical trees, with naked or scaly flowers, and long spiny leaves growing in spirals, belonging to Arales.

Pandanus, (pan-dā'nus). [From the Malay name] 1. A palm tree found in St. Jago. 2 Screw-pine: a tree with a pine-apple-like fruit. *P. candelabrum*=Chandelier tree.

Pane, (pān). [A.-S. *pan*, a piece.] *Fulminating P.*, *v.* Fulminating. *Luminous P*: a glass plane, covered partially with tinfoil, with a number of spaces so arranged that they form a luminous figure when electric sparks are sent across them.

Pangenesis, (pan-jen'e-sis) [Gk *pan*, all; Genesis, *q.v.*] An hypothetical form of genesis in which every cell of the body throws off undeveloped atoms, which are transmitted to each sex, and multiplied by self-division. They may remain undeveloped for generations.

Pangiaceæ, (pan-ji-ā'se-ē)=Pangiads. poisonous trees, with axillary flowers, belonging to Papayales.

Pangolins, (pan'gō-linz). [*Pangoeling*, the Javanese name.] Scaly ant-eaters: animals belonging to Edentata, found in Asia and Africa.


Pangolin.

Panicle,(pan'i-kl). A variety of inflorescence, in which the axes and pedicels are elongated, as in the crambe, grape-vine, &c. *Compound P.*: with elongated lateral axes and sessile flowers.

Panicum, (pan'i-kum) *P. miliaceum*=Millet.

Panorpidæ, (pan-or'pi-dē). [Gk. *pan*, all; *orpe*, hook] Scorpion flies. a family of insects belonging to Neuroptera.

Panspermic, (pan-sper'mik). [Gk. *pan*, all; *sperma*, seed.] *P. hypothesis*: that the air contains multitudes of germs, from which bacteria, &c., may be developed.

Panspermism, (pan-sper'mizm). [Gk. *pan*, all, *sperma*, seed.] The theory that life can come only from germs. *cf.* Spontaneous generation.

Panspermists, (pan-sper'mists). [Panspermism, *q.v.*] Advocates of the theory of panspermism, and, consequently, opponents of the theory of spontaneous generation.

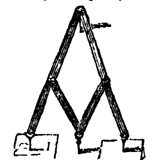
Pansy, (pan'zi). [F. *pensée*, thought.] Viola tricolor a small herb belonging to Violaceæ; also called heart's-ease.

Panther, (pan'ther). [The Greek name] A spotted variety of the leopard.


Panther.

Pantile, (pan'tīl) [Pan and Tile] A curved tile.

Pantograph, (pan'tō-graf). [Gk. *pan*, all; *grapho*, I write.] For copying plans to any given scale.


Pantograph

Pantopoda, (pan-top'ō-da). Sea-spiders= Podosomata, *q v.*

Papaver, (pap-ā'ver). [*Papa*, the Celtic name] =Poppy: an herb, with showy flowers, common in corn-fields, the type of Papaveraceæ. *P. rhœas*=Red Poppy. *P. somnifer um*=Opium poppy=White poppy.

Papaveraceæ, (pa-pav-er-ā'se-ē). [Papaver, *q v.*]=Poppy-worts. herbs and shrubs, often milky, and usually narcotic, belonging to Ranales.

Papaveric acid, (pa-pav'er-ik). [Papaver, *q.v.*] =Rheadic acid.

Papaverine, (pa-pav'er-in). [Papaver, *q v*]= $C_{20}H_{21}NO_4$: a natural alkaline base found in opium.

Papaveroleic acid=Linoleic acid, *q.v.*

Papaw, (pa-paw'). [*Papaya*, the Malay name]=Papaya, *q.v.*

Papaya, (pa-pa'ya). [*Papaya*, the Malay name.]=Carica papaya=Papaw tree: a tree, with large leaves and milky juice, found in South America.

Papayaceæ, (pa-pa-yā'se-ē) [Papaya, *q.v.*]= Papayads: tropical trees and shrubs, sometimes milky, with succulent fruit, the type of Papayales.

Papayales, (pa-pa-yā'lēz). [Papaya, *q v*] Plants with dichlamydeous flowers, forming a division of diclinous Exogens.

Paper. *P. coal* = Dysodile: a variety of lignite, named from occurring in thin laminæ. *P. mulberry*: Broussonetia, *q.v.* *P. nautilus*, *v.* Nautilus. *Fossil P.*: a variety of asbestos,

Papier maché, (pa-pi-ā ma'shā). [The French word.] Paper in a hardened form, capable of use for trays, &c.

Papilio, (pa-pil'i-ō). [The Latin name]= Butterfly: the typical genus of Papilionidæ, a family of diurnal Lepidoptera.

Papilionaceæ, (pa-pil-i-ō-nā'se-ē). [L. *papilio*, butterfly.] A sub-division of Fabaceæ, in which alone are papilionaceous flowers found: named from the petals resembling the wings of butterflies.

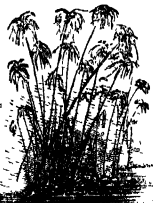
Papilionaceous, (pa-pil-i-ō-nā'sē-us.) [Papilionaceæ, *q.v.*] Resembling butterflies, used especially of the flowers of Papilionaceæ.

Papilionidæ, (pa-pil-i-on'i-dē). [Papilio, *q.v.*; Gk. *eidos*, form.] Butterflies: a sub-division of Lepidoptera, widely distributed: found especially in S. America, N. India, and Malay Islands

Papin's digester. An apparatus for raising water to very high temperatures and converting it into steam of high tension.

Papuans. An Oceanic race.

Papyrus, (pa-pi'rus). [*Papyros*, the Greek word.] Cyperus papyrus: a tree found on the banks of rivers, of which paper, ropes, mats, boats, &c, are made: belongs to Cyperaceæ.


Papyrus.

Par=Parr, *q.v*

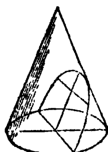
Para-, (pa'ra). [The Greek word.] A prefix implying beside of, or towards.

Parabanic acid = $C_3H_2N_2O_3$: a crystalline acid obtained from the mother-liquid of alloxan; also called oxalyl urea.

Parabenzoic acid, (pa-ra-ben-zō'ik). [Para and Benzoic, *q.v*]=Benzœretic acid: an acid resembling benzoic acid.

Parabenzol, (pa-ra-ben'zol). [Para and Benzol, *q.v*] A hydrocarbon found in coal naphtha.

Parabola, (pa-rab'ō-la). [*Parabole*, the Greek word.] One of the conic sections, made by a plane parallel to one of the sides: a curve in which any point is equidistant from the focus and the directrix.


Parabola.

Parabolic, (par-a-bol'ik). [Parabola, *q.v*] Related, or belonging, to a parabola.

Paraboloid, (pa-ra'bol-oid). [Parabola, *q.v*; Gk. *eidos*, form.] A solid figure, which may be considered as being generated by a parabola revolving on its axis.

Paracholic acid, (pa-ra-kol'ik). [Para, *q.v.*; Gk. *chole*, bile.] An acid obtained in the preparation of glycocholic acid.

Parachute, (pa-ra-shoot'). [The French word.] 1. A light-ball, which floats while burning and descends slowly. 2. An apparatus for descent through air (as from a balloon) by means of an expanding umbrella-like cover to a small car.

Paracyanogen, (pa-ra-sī-an'o-jen). [Para and Cyanogen, *q.v.*] = N_6C_6: a more compact form of cyanogen, which is solid at all ordinary temperatures.

Paradisea, (par-a-di'se-a). Bird of Paradise: a tropical crow-like bird, remarkable for the beauty and length of its feathers.

Paradiseidæ, (par-a-di-sē'i-dē). [Paradisea, *q.v.*] Gk. *eidos*, form.] A family of crow-like birds, belonging to Insessores, of which the bird of Paradise is the type.

Paradox, (par'a-doks). [Gk. *para*, contrary to; *doxa*, opinion.] *Hydrostatic P.*, in which a small quantity of water appears to have the same weight as a larger quantity: the heights of the two columns and the areas of their bases are always equal.

Paraffin, (par'a-fin). [L. *parum*, little; *affinis*, akin.] C_nH_{2n+2}: a solid white crystalline hydrocarbon obtained from wood-tar and from Boghead cannel coal: named from acids and alkalies having but very little effect on it.

Paraffin-oil. A liquid modification of paraffin.

Paragenesis, (par-a-jen'e-sis). [Para and Genesis, *q.v.*] The occurrence of two or more different minerals in the same lode, *e.g.*, quartz occurs with orthoclase, serpentine with steatite, &c.

Paraguay tea. An infusion of the leaves of Ilex Paraguayensis.

Paralactic acid, (par-a-lak'tik). [Para and Lactic, *q.v.*] = Sarcolactic acid: obtained from flesh: resembles lactic acid.

Paralbumin, (par-al-bū'min). [Para and Albumin, *q.v.*] A variety of albumin, *q.v.*

Paraldehyd, (par-al'de-hīd). [Para and Aldehyd, *q.v.*] A liquid variety of aldehyd.

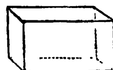
Parallax, (par'al-laks). [Gk. *parallaxis*, change.] The apparent change in the position of a star, &c., when the observer changes his place, the angle made by the lines of vision from different points of observation. *P. stars:* stars having a perceptible parallax: such as Sirius and Arcturus.

Parallels, (par'a-lelz). [*Parallelos*, the Greek word.] Lines that are side by side, and always equidistant. *P. of latitude:* imaginary lines on the globe, or maps, parallel to the equator. *P. roads of Glen Roy:* three parallel lines of beach. *v.* Roy, Glen.

Parallelogram, (par'a-lel-ō-gram). [Gk. *parallelos*, parallel; *gramma*, drawing.] A four-sided figure, the opposite sides of which are parallel.


Parallelogram

Parallelopiped, (par-a-lel-ō-pī'ped). [Gk. *parallelos*, parallel; *epipedon*, plane surface.] A solid, bounded by six surfaces, each of which is a parallelogram, the opposite faces being parallel.


Parallelopiped.

Paralysis, (par-al'i-sis). [The Greek word.] The loss of the power of motion in any part of the body.

Paramagnetic, (par-a-mag-net'ik). [Para and Magnetic, *q.v.*]=Magnetic: used to distin-

guish bodies usually called magnetic from those that are dia-magnetic; paramagnetism =Attraction by a magnet; diamagnetism= Repulsion.

Parameter. In crystallography, the portion of an axis between the centre and the surface.

Paramecium, (par-a-mē'si-um). A simple animal organism, consisting of a cortical layer, lined with sarcode, and filled with a semi-fluid substance: the type of Infusoria.

Paramorphia, (par-a-mor'fi-a). [Para and Morphia, *q.v.*]=Thebaia, *q.v.*

Paramylene, (par-am'i-lēn). [Para and Amylene, *q.v.*]=Diamylene=$C_{10}H_{20}$: a liquid hydrocarbon of the olefine series.

Parapectic acid, (par-a-pek'tik). [Para and Pectic, *q.v.*] An amorphous variety of pectic acid.

Parapodia, (par-a-pō'di-a). [Gk. *para*, beside, *poda*, feet.] Lateral feet-like processes, found in molluscous and other animals.

Parapophyses, (par-a-pof'i-sēz). [Para and Apophysis, *q.v.*] Thread-like or narrow leaf-like plates in Muscineæ, also a general term for lateral processes.

Paraselenæ, (par-a-se-lē'nē). [Gk. *para*, beside; *selene*, moon.]=Mock-moons: prismatic images of the moon seen during the appearances of halos. *cf.* Parahelia.

Parasita, (par-a-si'ta). [Gk. *parasitos*, parasite.]=Lice, tick, &c., wingless spider-like animals living on mammals and birds.

Parasites, (par'a-sits). [*Parasitos*, the Greek word.] Animals or plants feeding at expense of others, not a class of animals or plants, but found in inferior ranks of all classes, commonly aberrant forms. All animals and plants are parasitic at some period of life. *cf.* Epiphytes.

Parasitic, (par-a-sit'ik). [Parasites, *q.v.*] *P. fungi:* mould, mildews, &c. *P. nests:* of cuckoo, sparrow-hawk, kestrel, starling, gall-flies, &c.

Parasitica, (par-a-sit'i-ka). [Gk. *parasitos*, parasite.] One of Hœven's sub-divisions of Insects.

Parasphenoid, (par-a-sfē'noid). [Gk. *para*, beside; *sphenoides*, wedge-shaped.] A large bone in the floor of the skull, larger than basi-sphenoid, *q.v.*, in bony fishes and in Batrachia.

Parastichies, (par-a-stik'i-ēz). [Gk. *para*, beside, *stichos*, row.] Spiral rows. *cf.* Orthostichies.

Paratartaric acid, separates into dextro-tartaric and lævo-tartaric acids. *v.* Tartaric acid.

Paratonic, (par-a-ton'ik). [Para and Tonic, *q.v.*] Sensitive to light; used especially of plants.

Parchment, (parch'ment). [*Parchemin*, the French word.] A skin for writing on, prepared from goat or sheepskin. *Vegetable P.*, paper modified by chemical action into a substance resembling parchment.

Pardalotus, (pàr-da-lō'tus). An Australian bird belonging to Ampelidæ. *v.* Manakins.

Parellic acid, (pa-rel'lik)=$C_9H_6O_4$: obtained from the lichen Parella; also called Lecanora parella=Parellin.

Parenchyma, (par-en'ki-ma). [Gk. *para*, beside, *en*, in; *chyma*, a pouring.] 1. The substance of the viscera: a tissue composed of rows of rounded cells, with interstices. 2. The cellular tissue in plants.

Pargasite, (pàr'ga-sīt). A variety of hornblende.

Parhelia, (par-hē'li-a). [Gk. *para*, beside; *helios*, sun.]=Mock-suns: bright images of the sun, seen occasionally when a solar halo occurs.

Parian, (pā'ri-an). [Island of Paros.] *P cement:* a compound of plaster of Paris and borax. *P. marble:* a waxy cream-coloured variety of marble.

Paridæ, (pā'ri-dē). [Parus, the typical genus.] Tits: small perching birds; also called Titmice.

Paridigitata, (par-i-di-ji-tā'ta). [L. *par*, equal, *digitus*, finger.] Extinct Mammalian animals, remains of which are found in Miocene rocks.

Parids, (par'idz). [Paris, *q.v.*]=Trilliaceæ, *q.v.*

Parietal, (pa-rī'e-tal) [L. *paries*, wall.] Belonging to the walls of the body, or to the side of the cranium.

Parietaria, (pa-rī-e-tā'ri-a). [L. *paries*, wall.] =Pellitory: an herb belonging to Urticaceæ.

Parieto-splanchnic, (pa-rī-e-tō-splangk'nik). [L. *paries*, wall; *splagchnon*, viscera.] In Mollusca: a ganglion supplying the viscera, gills, and mantles.

Paris, (par'is). [L. *par*, equal.]=Herb Paris: an herb belonging to Liliaceæ.

Parisite, (par'i-sīt). A mineral.

Parkeria, (pàr-kē'ri-a). [Mr. Parker.] 1. Arenaceous foraminifera. 2. Plants belonging to Polypodiaceæ.

Parkia, (pàr'ki-a). [Mungo Park.] A plant belonging to Leguminaceæ. *P. Africana*= Doura tree.

Parmelia, (pàr-mē'li-a). [Gk. *parme*, shield; *eilo*, I enclose.] Palo-lichen. *P. parietaria* =Stone-lichen. *v.* Lichenales.

Parmeliaceæ, (pàr-mē-li-ā'se-ē). [Parmelia, *q.v.*] Leaf-lichens. *v.* Lichenales.

Parnassia, (pàr-nas'si-a). [Mount Parnassus.] Grass of Parnassus: a slender, stemless herb, belonging to Saxifragaceæ.

Paronychiaceæ, (par-ō-nik-i-ā'se-ē). [Gk. *paronychia*, whitlow.] Knot-worts=Illecebraceæ, *q.v.*

Paroquet, (par'ō-ket). [*Perroquet*, the French name.] *v.* Parrakeet.

Parotid, (pa-rot'id). [Gk. *para*, near; *ous*, ear.] *P. gland:* at the side of the mouth cavity.

Parquetry, (pàr'ket-ri). [F. *parquet*, inlaid floor.] Wood-work in patterns, usually for floorings. *cf.* Marquetry.

Parr, par). A young salmon which produces milt; probably the mature condition of a trout, which becomes enlarged by a change to sea diet. *cf.* Grilse.


Paroquet.

Parrakeets, (par'ra-kēts). [*Perroquet*, the French name]=Pezoporinæ. parrot-like birds belonging to Psittacidæ.

Parret coal, (par'ret) [Parrot, *q v.*]=Cannel coal: a Scotch variety of bituminous coal, named from the noise it makes when burning.

Parrot, (par'rot). [*Perroquet*, the French word.] A bird belonging to Psittacidæ. *Ground P* =Pezoporus formosus of Australia. *Philip Island P.*=Nestor productus: one bird only of this species, known to be living. *P gun:* a muzzle-loading gun, having projectiles with an expansible metal coating. *v.* Gun.

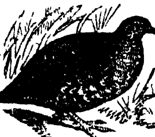

Parrot

Parsley, (pars'li). [*Petroselinon*, the Greek name.]=Carum petroselinum=Petroselinum sativum: an herb belonging to Apiaceæ. *Beaked P.*=Anthriscus. *Corn P.*=Carum segetum. *Fool's P.*=Æthusa. *Bur P*=Caucalis. *Hedge P.*=Caucalis (pars)=Torilis. *Milk P.*=Peucedanum palustre. *P. piert* = Alchemilla arvensis.

Parsnip (pars'nip). [*Pastinaca*, the Latin name.]=Peucedanum: a plant belonging to Apiaceæ. *Cow P.*=Heracleum. *Water P.*=Sium. *Wild P.*=Peucedanum sativum

Parthenogenesis, (par-then-ō-jen'e-sis). [Gk. *parthenos*, virgin, *genesis*, generation.] Reproduction without union of the sexes, as in gemmation, fission, &c.; probably=Agamogenesis, carried on in a reproductive organ; occurs in plant-lice, some crustacea and insects: very rare in plants, *e.g.*, cannabis, hemp, bryony, &c.

Partridge, (par'tridj). [*Partrich*, the O.-E. name.]=Tetrao: a poultry-like bird belonging to Perdicidæ. *P. wood:* from a tree in Brazil. *Snow P.*=Lagopus.


Partridge

Parvoline, (par'vō-lin)=$C_9H_{13}N$: a base belonging to the Pyridine series.

Pascal's vases: designed to show that the pressure on the base of a vessel containing a liquid depends only on the area of the base and the height of the liquid. *P.'s principle*, that in a liquid pressure is transmitted equally in all directions.

Pasque flower=Anemone pulsatilla.

Parus, (pā'rus). [Tit: a bird belonging to Paridæ, *q.v.*] *P. caudatus*=Bottle-tit.

Passage. *P. beds*=Tilestones, *q v.* *P winds*=Counter Trade-winds. *v.* Trade winds.

Passer, (pas'ser). [The Latin name.] A small perching bird, belonging to Fringillidæ. *P. domesticus*=Fringilla domesticus=Sparrow.

Passeres, (pas'se-rēz). [Passer, *q.v.*] Perching birds=Insessores, *q.v.*

Passifloraceæ, (pas-si-flō-rā'se-ē). [Passiflora, the typical genus.]=Passion-worts herbs and shrubs, usually climbing, with edible fruit, belonging to Violales

Passive. *P. iron:* when it is the negative pole of a galvanic cell, in which condition strong nitric acid has no action on it.

Pastern, (pas'tern). One of the phalanges of a horse's foot.

Pasteur. *P.'s fluid*=Water, tartrate of ammonia, sugar, and yeast ash. *P's theory of fermentation:* that life is an essential condition of fermentation.

Pastinaca, (pas-ti-nā'ka). [*Pastus*, pasture.] =Parsnip: a plant belonging to Apiaceæ, also considered as a sub-genus of Peucedanum.

Patagium, (pat-ā'ji-um). [Gk. *patagion*, flapper.] The wing-like expansion of the integument by which bats, flying lemurs, &c., support themselves in the air.

Patella, (pa-tel'la). [L. *patella*, pan.] 1 Knee-pan: a triangular bone between the thigh and shin bones 2. Limpet, *q.v.*

Pathology, (pa-thol'ō-ji). [Gk. *pathos*, suffering, *logos*, discourse] The science of the action of functions during disease.

Patma-worts=Rafflesiaceæ, *q.v*

Paucicum, (paw'si-kum). Indian millet. *v.* Sorghum.

Paul, (pawl)=Click: a small arm to drive or check a wheel. *v.* Detent. *P. and half P.:* two pauls of different lengths acting on the same wheel.

Pauropus, (paw'ro-pus)=Pauropoda: a genus of Myriapoda: an animal $\frac{1}{20}$ inch long.

Paviin=Fraxin, *q.v.*

Pavo, (pā'vō). [The Latin name] 1.=Peacock: a bird the type of Pavonidæ. 2.=The Peacock: an unimportant southern constellation.

Pavonidæ, (pā-von'i-dē). [L *pavo*, peacock, Gk. *eidos*, form.] Peacocks, turkeys, &c.: poultry-like birds, &c., belonging to Phasianidæ.

Pea, (pē). [*Pisa*, the A.-S. name.] Pisum=An herb belonging to Fabaceæ. *Everlasting P.*=Pisum sativium=Lathyrus. *P. fowl*=Pavonidæ, *q.v.* *P. green moth*=Tortrix viridana.

Peach, (pēch). [*Pêche*, the French name.] =Amygdalus Persica: a plant belonging to Rosaceæ. *P. blossom moth*=Thyatira batis. *P. wood:* a variety of Brazil wood, called St. Martha's wood.

Peacock. 1. An unimportant southern constellation. 2. Pavo, *q.v.* 3. *P. butterfly*=Vanessa Io. *P. ore*=A variety of copper pyrites, chiefly sulphide of copper, having a surface brilliantly variegated.


Peacock.

Pear, (pār). [*Pyrige*, the

A.-S. name.]=Pyrus communis: a tree belonging to Rosaceæ. *Anchovy P.*=Grias cauliflora *Avocada P*=Persea gratissima. *P. encrinites*=Apiocrinidæ, found only in Mesozoic rocks. *Living P.*=Rhizocrinus lofotensis. *P. iron ore.* a variety of hæmatite. *P. moulds*=Mucoraceæ, *q.v.* *P. oil*=An alcoholic solution of amyl acetate. *P. weevil*=Apion, a beetle.

Pearl, (perl). [The A.-S word] 1. A secretion of carbonate of lime and animal membrane, found in some oysters. *v.* Pearls 2.=Rhombus vulgaris, a fish. *P. ash*=Impure carbonate of potassium. *P. moths*=Pyralides. *P. oysters*=Avicula margaritifera = Meleagrina margaritifera. *P. spar*: a crystalline variety of dolomite. *P. stone:* 1. An amorphous variety of felspar; 2 =Pisolite. *P. white*=*P. powder*: a mixture of bismuth oxychloride and hydrochloric acid. *P. wort*=Sagina.

Pearls, (perlz). [Pearl, *q.v.*] Portions of the epidermis of pearl oysters, not used in the formation of the shells, collected round grains of sand as nuclei.

Pearly Nautilus=Nautilus pompilius, *q.v.*

Peas. Plants belonging to Fabaceæ. *v.* Pea.

Peat, (pēt). Decayed vegetable matter: an inflammable mineral, resembling humus, used as fuel.

Peba, (pē'ba)=Tatusia peba: an armadillo.

Pebbles, (peb'blz). [*Pabul*, the A.-S. word]=Water-worn fragments of rock. *Scotch P.*: a variety of agate.


Peba

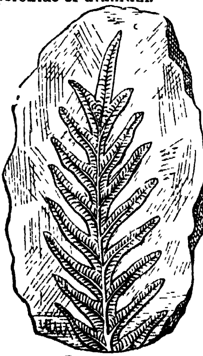
Pecan,(pe-kan'). [*Pacana*, the Spanish name.]=Carya divæformis. an American plant, belonging to Juglandaceæ

Peccaries, (pek'a-riz). [The S. American name] Dicotyles,: Swine-like animals of America, corresponding to the swine of the Old World. *v.* Suidæ.

Pechurane, (pek'u-rān)=Pitchblende, *q.v.* A mineral, chiefly peroxide of uranium.

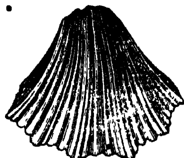
Peck, (pek)=Two gallons: one-fourth of a bushel.

Pecopteris, (pe-kop'ter-is). [Gk. *pekten*, comb; *pteris*, fern.] A fern, known by fossil remains found in coal: named from their comb-like appearance. *cf.* Alethopteris.


Pecopteris.

Pecora, (pek'o-ra). [L. *pecus*, cattle.] Term used by Linnæus for ruminating animals. *v.* Educabilia.

Pecten, (pek'ten). [L. *pekten*, comb.] 1. Comb-shell: an oyster-like animal. 2 A membrane in the eye of birds.


Pecten.

Pectic acid, (pek'-tik). [Gk. *pektis*, jelly.]=$C_{16}H_{22}O_{15}$: a transparent insoluble jelly found in plants.

Pectin, (pek'tin). [Gk. *pektis*, jelly.] =Vegetable jelly: a gelatinous substance found in plants.

Pectinibranchiata,(pek-tin-i-brang-ki-ā'ta) [L. *pekten*, comb; Gk. *brangchia*, gills.] A subdivision of Gasteropoda; named from the comb-like gills.

Pectinicornes, (pek-tin-i-kor'nēz). [L. *pecten*, comb, *cornu*, horns, antennæ.]=Lucanidæ: a primary division of beetles.

Pectinidæ, (pek-tin'i-dē). [Pekten, *q.v.*]=Ostreidæ, *q v.*

Pectoral, (pek'to-ral). [L. *pectus*, breast.] Related to the breast *P. arch*=Scapular arch: scapula, coracoid, and clavicle, connecting pectoral limbs. *P. fins:* very large in flying gurnard and flying fish; *v.* Fin. *P. limbs:* arms, &c.; *v.* Limbs.

Pectose, (pek'tōs). [Pectin, *q v.*] An insoluble substance found in the cellular tissue of fruits, which becomes pectin when acted on by acids and heat

Pectosic acid, (pek-tō'sik) [Pectose, *q.v.*] A gelatinous acid obtained from pectin.

Pectostraca, (pek-tos'tra-ka). [Gk. *pectos*, fixed; *ostrakon*, shell.] Cirripedia, &c.: crustaceans which when adult become fixed, divided into:
Rhizocephala, parasitic on other crustaceans
Cirripedia, adhering by suckers.

Pectunculus, (pek-tun'ku-lus). [L. *pectunculus*, little comb.] A marine oyster-like animal.

Pedaliaceæ, (pe-dal-i-ā'se-ē). [Gk. *pedalion*, rudder.]=Pedaliads herbs with large flowers, belonging to Bignoniales.

Pedetes, (pe-dē'tēz). [Gk. *pedetes*, bound] = Helamys, *q.v.* *P. Capensis*=Jumping hare.

Pedicels, (ped'i-selz). [*Pediculus*, the Latin word] Small stems: sub-divisions of flower-stalks or peduncle.

Pedicellariæ, (ped-i-sel-lā'ri-ē). [Pedicles, *q.v.*] Small pincer like processes on the bodies of some Echinodermata.

Pedicularis, (ped-i-kū-lā'ris). [L. *pediculus*, louse.] Louse-wort: a parasitic herb, belonging to Scrophalariaceæ, named from being supposed to produce lice.

Pediculi, (ped-ik'u-li). [The Latin name.] =Lice: minute parasitic insects belonging to Anoplura, *q v.*

Pediculus, (ped-ik'u-lus). [The Latin name.] Louse. *v.* Pediculi.

Pedilanthus, (ped-i-lanth'us). [Gk. *pedilon*, slipper; *anthos*, flower.] A plant belonging to Euphorbiaceæ. *P. tithymaloides*=Jewbush.

Pedimana, (ped-im'a-na). [L. *pes*, foot; *manus*, hand.] Name suggested by Ogilby for American monkeys, owing to their having no opposable thumb, and so not being Quadrumana.

Pediment, (ped'i-ment). [L. *pes*, foot.] The triangular upper portion of a Grecian portico, door, or window.


Pediment.

Pedipalpi, (ped-i-pal'pi). [L. *pes*, foot; *palpi*, feelers.] Scorpions, &c., *q.v.*

Peduncle, (pe-dung'kl). [L. *pedunculus*, little stem.] Flower-stalk. *cf.* Pedicel.

Pedunculated, (ped-ung-ku-lā'-ted). [Peduncle, *q v.*] Stalked. *P. cirripede*=Lepas. *v.* Barnacle.


Peduncle

Pee-wit, (pē'wit)=Lapwing=Vanellus cristatus: a bird belonging to Charadriadæ, named from its cry.

Pegasi, (peg'a-sī). Belonging to Pegasus, *q v.*

Pegasus, (peg'a-sus). [Classical.] =The Winged Horse: one of the northern constellations, of which Markab, Scheat, and Algenib are the chief stars.

Pegmatite, (peg'ma-tit). [Gk. *pegma*, hardened.] A coarse variety of granite.

Peitho. No. 118 of the Minor Planets, discovered in 1872.

Pektolite, (pek'tō-lit). A mineral, chiefly silicate of calcium.

Pelagic, (pe-lā'jik). [Gk. *pelagos*, sea.] Belonging to deep sea.

Pelagidæ, (pe-la-ji-dē). [Gk. *pelagos*, sea.] A sub-division of Cœlenterata, including Lucernariadæ. some are fixed, some free.

Pelagus, (pe-lā'gus). [Gk. *pelagos*, sea.] White-bellied seal. *v.* Seal.

Pelargonium, (pel-ar-gō'ni-um). [Gk. *pelargos*, stork.] Stork's-bill: an herb, with gaily coloured flowers, belonging to Geraniaceæ. *P zonale:* an insectivorous plant.

Pelasgic, (pe-las'jik). A general term for people inhabiting S.E. Europe, derived from the Pelasgi, or ancient inhabitant of Greece. *P architecture*=Cyclopean architecture.

Pelecanidæ, (pel-e-kan'i-dē). [Pelecanus, *q.v.*; Gk. *eidos*, form.] Pelicans, cormorants, &c.: birds belonging to Natatores.

Pelecanus, (pel-e-kā'nus). Pelican: a sea-bird, found near coasts, with long-pointed bill, short, strong feet, and a skin bag, the type of Pelicanidæ. *P. berus*=Common viper.

Pellitory, (pel'li-to-ri). [*Pelitre*, the Spanish name.]=Parietaria, *q.v.*

Pelobates, (pel ob a-tēz). [Gk. *pelos*, mud; *bates*, walker.] A batrachian animal belonging to Anoura.

Peloconite, (pel-o-kō'nīt). [Gk. *pelos*, mud; *konos*, cone.] A mineral, chiefly phosphate of iron, &c.

Pelopium, (pel-ō'pi-um) An hypothetical metal, probably an alloy of niobium.

Peltidea, (pel-tid'e-a). [Gk. *pelte*, shield.] *P. canina*=Dog-lichen.

Peltigera, (pel-tij'e-ra). [Gk. *pelte*, shield; L. *gero*, I bear.] An edible lichen.

Peltry, (pel'tri). [*Pelleterie*, the French name.] 1. A general term in N. America for undressed skins. 2. The skin of the black or silver fox, Canis argentatus.

Peludo=Hairy Armadillo=Euphractus villosus

Pelvic, (pel'vik). [Pelvis, *q.v.*] Related to the pelvis. *P. arch:* ilium, ischium, and pubes, usually anchylosed=Os innominata: connect pelvic limbs with trunk. *P. limbs* =Posterior limbs, legs, &c.

Pelvis, (pel'vis). [L. *pelvis*, basin.] 1. A girdle of bones at the lower end of the trunk 2. Central portion of an encrinus, &c.

Pemmican, (pem'mi-kan) Term used by N American Indians for dried meat preserved for food.

Pen. *P. of cuttle-fish*=Cuttle-bone: internal skeleton of octopus, &c.

Penæaceæ, (pen-ē-ā'se-ē). [Penæa, the typical genus.] Shrubs belonging to Rhamnales

Penang-lawyers=Walking sticks made of palm-wood

Penarth beds. [P. near Cardiff.]=Rhætic beds, *q v.*

Pencil, (pen'sil). [*Penicillum*, the Latin word.] *P. of rays:* a small number of converging or diverging rays.

Pendant, (pen'dant). [L. *pendo*, I hang.] A general term for any suspended or dependent ornament.

Pendentives, (pen-den'tivz). [L. *pendo*, I hang.] Triangular spaces between the arches supporting a dome.

Pendulum, (pen'du-lum). [L. *pendulus*, hanging.] A body suspended from a fixed point. *Compensation P.*: one in which the contraction or expansion from cold or heat is compensated. *Compound P.*: a number of simple pendulums, connected so as to vibrate as one. *Conical P.*=Governor: a pendulum moving in a circle. *Gridiron P.*, *v.* Gridiron. *Mercurial P.*, *v.* Mercury *Simple P.*: a heavy body suspended by a fine thread.

Penelope, (pē-nel'ō-pē). [Classical.] A poultry-like bird belonging to Cracidæ.

Penguin, (pen'gwin). [W. *pen*, head; *gwyn*, white.]=Spheniscus, *q.v.* *King P.*=Aptorodytes Patagonica. *Jackass P.*=Spheniscus demersus.

Penguins, (pen'gwinz). [Penguin, *q.v.*]= Spheniscidæ, *q.v.*: aquatic birds, with rudimentary wings, which are used as fins.

Penicillum, (pen-i-sil'lum). [The Latin word.] Green-mould: a fungus found on decaying organic substances. Micrococci of *P. crustaceum* are found in typhoid fever.

Pennifera, (pen-nif'er-a). [L. *penna*, feather; *fero*, I carry.] De Blainville's term for birds.

Penny. *P. cress*=Thlaspi arvense. *P. royal* 1=Mentha pulegium. 2.=Cotyledon. *P. weight*=24 grains, *v.* Troy weight. *P. wort* =Hydrocotyle vulgaris.

Pentachlorides, (pen-ta-klō'ridz). [Gk. *pente*, five; Chloride, *q.v.*] Compounds, the molecule of which contains five atoms of chlorine.

Pentacrinus, (pen-tak'ri-nus). [Gk. *pente*,

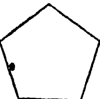
five; *krinon*, lily] Five-cornered lily. a variety of stone lily *v.* Encrinites.

Pentactæ, (pen-tak'te). [Gk *pente*, five; *actis*, ray.] Sea-cucumbers a sub-division of Echinodermata.

Pentadesmis, (pen-ta-des'mis). [Gk. *pente*, five, *desmos*, band] A plant belonging to Clusiaceæ *P butyracea* = Tallow tree

Pentads, (pen'tadz). [Gk. *pente*, five] = Pentatomic elements: equivalent to five atoms of hydrogen, *e g*, phosphorus, nitrogen, &c.

Pentagon, (pen'ta-gon). [Gk. *pente*, five; *gonia*, angle.] 1 Generally, any plane figure formed by five straight lines; specially, a plane figure formed by five equal sides.


Pentagon.

Pentamerus (pen-tam'e-rus [Gk. *pente*, five; *meros*, part] 1 A fossil brachiopod, found only in Palæozoic rocks 2. An insect belonging to Coleoptera.

Pentastoma, (pen-tas'to-ma). [Gk. *pente*, five *stoma*, mouth.] = Linguatula: a parasitic animal, the type of Pentastomidæ, *q.v*

Pentastomidæ, (pent-ta-stōm'i-dē). [Pentastoma, *q v*] Animals belonging to Arachnida, parasitic on dogs, rabbits, &c ; with long vermiform bodies; no respiratory or circulating organs.

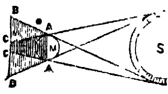
Pentremites, (pen'tre-mits). [Gk *pente*, five] A crinoid, known by fossil remains in coal measures. *v.* Crinoidea.

Pent-roof [F. *pente*, slope] A roof with sloping sides.

Pentunculus, (pen-tung'ku-lus). A marine mollusc, known by fossil remains found in Pliocene rocks.

Pentyl, (pen'til). A new name for amyl.

Penumbra, (pe-num'bra). [L. *pene*, almost, *umbra*, shade] The lighter portion of a shadow.



Penumbra
S, sun; M, moon; B A C, penumbra

Peony, (pē'o-ni). [M. Pæon.] = Pæonia: a plant, with gay flowers, belonging to Ranunculaceæ.

Peplis, (pep'lis). [*Peplion*, the Greek name] Water purslane: an herb belonging to Lythraceæ.

Pepper, (pep'per). [*Piper*, the Latin word] *Bird P.* = Capsicum frutescens. *Black P* = Drupes of Piper nigrum. *Cayenne P.* = Ground seeds of capsicum *Long P.* = Spikes of Chavica Roxburghii. *Water P.* = Polygonum hydropiper. *White P.* = Drupes of Piper nigrum, with the black skin removed. *P. moth* = Biston. *P. saxifrage* = Silaus. *P. wort* = Lepidium campestre

Pepperdulse = Laurentia pinnatifida: an edible sea-weed.

Pepper-worts = Piperaceæ = Marsileaceæ, *q v.*

Pepsin, (pep'sin). [Gk *pepsis*, cooking.] The peculiar protein compound which is the essential constituent of the gastric juice.

Peptic, (pep'tic). [Pepsin, *q.v.*] *P. glands:* in the lining of the stomach, which secrete the gastric juice.

Peptones, (pep'tōnz) [Pepsin, *q v*] = Soluble modifications of proteids, incipient albumin.

Per-, a prefix implying the presence of a chemical element in the highest proportion known: as persulphide, peroxide, &c.

Perameles, (per-a-me'lēz). [Gk *pera*, purse; *meles*, badger.] = Bandicoot = Thylacis a frugivorous and insectivorous marsupial animal.

Perca, (per'ka). [The Latin name] — Perch: a fresh water fish, the type of Percidæ, a family of Acanthopterygii

Perch, (perch) [Perca, *q.v*] *v.* Perca. *Climbing P* = Anabas


Perch

Perchers = Insessores, *q v.*

Perchlorates, (per-klō'rāts) [Per and Chlorates, *q v*] Compounds of perchloric acid with bases.

Perchloric acid = $HClO_4$ = Hydric perchlorate: a colourless volatile liquid, useful as an oxidising agent, in contact with which organic combustible substances catch fire

Perchlorinated ether = $(C_2Cl_5)_2O$ = Ether in which all the hydrogen has been displaced by chlorine: a crystalline substance.

Percnopteris, (perk-nop'ter-is) [Gk *perknos*, black, *pteron*, wing] A bird belonging to Vulturidæ, also called Pharaoh's chicken.

Percussion cap. A small copper cap, containing mercuric fulminate, nitre, &c , which is exploded by percussion.

Perdicidæ, (per-dis'i-de). [Perdix, *q.v.*; Gk. *eidos*, form] Quails, &c.: a family of poultry-like birds

Perdix, (per'diks). [The Latin name] Partridge a bird, the type of Perdicidæ.

Peregrine falcon, (per'e-grin). [L. *peregrinus*, foreign.] Falco communis: a variety of the falcon

Perennibranchiata, (per-en-ni-brang-ki-ā'ta) [L *perennis*, perpetual Gk. *bragchia*, gills.] Amphibious animals which retain their gills throughout life

Perianth, (per'i-anth). [Gk. *peri*, about: *anthos*, flower.] A general term for calyx and corolla, or any modification of these.

Pericardium, (per-i-kar'di-um). [Gk. *peri*, around, *kardia*, heart] The membrane by which the heart is surrounded.

Pericarp, (per'i-kārp) [Gk. *peri*, about; *karpos*, fruit] = Seed-vessel. *q v.*


Pericarp.

Periclase, (per'i-klāz). [Gk *peri*, about, *klasis*, fracture.] A mineral, chiefly oxide of magnesium.

Peridot, (per'i-dot). [The French name.] A green transparent variety of chrysolite

Perigee, (per'i-jē). [Gk *peri*, about: *ge*, the earth] The point in the orbit of a planet, or of the moon, which is nearest the earth

Perigymna, (per-i-jim'na). [Gk *peri*, about; *gymnos*, naked.] Burmeister's term for Tunicata.

Perigynous (pe-rij'i-nus). [Gk. *peri*, about; *gyne*, woman.] Term used of plants having the stamens adhering to either calyx or corolla.

Perihelion, (per-i-hē'li-on) [Gk. *peri*, about;

helios, sun] The point in the orbit of a planet which is nearest the sun.

Perilymph, (pẹr'i-limf) [Gk. *peri*, around; Lymph, *q. v.*] A watery fluid, surrounding the semi-circular canals of the ear.

Periodic, (pē-ri-od'ik). [Gk. *periodos*, circuit.] *P. stars:* those that appear, or vary in magnitude, at regular intervals of time.

Periodic acid, (per-i-od'ik). [Per and Iodic, *q.v.*]=Hydric periodate: HIO_4, a crystalline acid.

Periosteum, (pe-ri-os'te-um). [Gk. *peri*, around; *osteon*, bone.] A white fibrous membrane covering bones, and serving for the attachment of muscles, &c.

Peripheric type of animals, (per-i-fer'ik). [Periphery, *q.v.*] Von Baer's term for Radiata.

Periphery, (per-if'e-ri). [Gk. *peri*, around; *phero*, I carry.] The circumference of a curvilinear figure.

Periscopic, (per-i-sko'pic) [Gk. *peri*, around; *skopeo*, I view] *P. glasses:* spectacles of concavo-convex lenses, giving a wider field of view than usual.

Perissodactyla, (per-is-sō-dak'ti-la). [Gk. *perissos*, uneven, *daktylos*, finger]=A division of Ungulata: animals belonging to Mammalia, which have an odd digit, such as the horse, tapir, &c.

Peristaltic, (per-i-stal'tik). [Gk. *peristaltikos*, drawing together to a centre.] *P. movement:* by successive waves, *e.g.*, the propulsion of the contents of the intestines.

Peristome, (per'i-stom). [Gk. *peri*, around: *stoma* mouth] A fringe of hair, bristles, &c, round the mouth, used especially of sea-urchins.

Peritheca, (per-i-thē'ka) [Gk. *peri*, around; *theke*, case.] Envelopes enclosing spore-vessels, found on some fungi.

Peritoneum, (per-i-to-nē'um). [Gk. *peri*, around, *teino*, I stretch] The thin membrane lining the viscera and the walls of the abdomen.

Periwinkle, (per-i-wing'kl). 1 Vinca: a plant belonging to Apocynaceæ. 2. A corruption of petty winkle or whelk.

Perlariæ. A division of Neuroptera; insects with hairy wings

Perleb's classification of plants—

Cellulares=Acotyledons.
  Leafless=Protophyta.
  Leafy =Muscosæ.
Vasculares=Cotyledons.
  Endogens=Monocotyledons.
    Cryptogamia =Filicinæ.
    Phanerogamia=Ternatinæ.
  Exogens=Dicotyledons.
    With simple perianth=Monochlamydeæ.
    With double perianth.
      Monopetalous and hypogynous=Thalamanthæ.
      Monopetalous and perigynous=Calycanthæ.
      Pleiopetalous and perigynous=Calycopetalæ
      Pleiopetalous and hypogynous=Thalamiopetalæ.

Permanganates, (per-man'gan-āts) [Per and Manganate, *q v.*] Compounds of permanganic acid with bases.

Permanganic acid, (pẹr-man-gan'ik). [Per and Manganic, *q v.*] $H_2Mn_2O_8$: the most highly oxidised form of manganic acid.

Permian, (pẹr'mi-an). [Perm, in Russia]=Magnesian limestone: the highest of the primary formations, including all rocks above the Carboniferous, and below the Trias, with fossils resembling those below more than those above; contains fossil fishes with heterocercal tails.

Permutation, (pẹr-mū-tā'shun). [*Permutatio*, the Latin word] Changes in the order in which a number of things may be arranged Ex. *a*, *b*, *c*, may be arranged 6 ways, thus—*abc*, *acb*, *bac*, *bca*, *cba*, *cab*.

Pernis, (pẹr'nis) [L. *pernis*, swift.] Honey buzzard: a bird belonging to Falconidæ.

Peroneal, (pe-rō-nē'al). [Gk. *perone*, clasp] Related to the fibula. *P bone*=Fibula.

Peronospora, (per-o-nos'po-ra). A fungus. *P. infestans*=Potato-blight.

Peroxides, (pẹr-oks'idz). [Per and Oxide, *q v*] Oxides containing the largest proportion of oxygen.

Perpendicular, (per-pen-dik'ū-lar). [L. *per*, thoroughly; *pendo*, I hang] Generally, at right angles to any given line; specially, vertical, at right angles to the horizon.

D
A C B
D, C, perpendicular, A, B, horizontal

Perry, (per'ri). [*Poiré*, the French word.] The fermented juice of the pear.

Persea, (pẹr-sē'a). A plant belonging to Lauraceæ. *P. gratissima*=Avocada pear.

Perseus, (pẹr'sūs). [Classical.] One of the northern constellations: of which Mirtak and Algol are the chief stars, and which contains several remarkable clusters of stars.

Persian, (pẹr'si-an). *P. apple*=Peach *P architecture:* a modification, or development, of Assyrian. *P. berries:* Rhamnus. *P wheel:* a wheel having water-buckets on the rim, by means of which water can be raised.

Persica, (pẹr'si-ka). [Persia.]=Peach-tree=Amygdalus Persica, a tree belonging to Drupaceæ.

Persicaria, (pẹr-si-kā'ri-a). A variety of Polygonum, *q.v.*

Perspective, (pẹr-spek'tiv) [L. *per*, through; *specto* I look at.] *P drawing:* one made on a surface, so that the objects represented appear to be seen through the surface. Ordinary pictorial drawing is perspective. *v.* Projection.

Perspiration, (pẹr-spi-rā'shun). [L. *perspiro*, I breathe through.]=Sweat: an acid fatty secretion made by the skin, containing also scales of the epidermis.

Peru. *Balsam of P.*, *v.* Myrospermum.

Peruvian, (pẹr-ō'vi-an). [Peru] *P. bat*=Vespertilio leporinus. *P. bark:* bark of cinchona. *v.* Quinine.

Peruvine=Styrone.

Petalite, (pet'a-līt). [Gk. *petalon*, leaf.] A mineral, chiefly silicate of aluminum, in which lithium is found.

Petaloideæ, (pet-al-oi'de-ē). [Gk. *petalon*, leaf; *eidos*, form.] Plants, having the perianth mostly petaloid, usually coloured and seldom green, forming a division of Monocotyledons.

Petals, (pet'alz). [Gk. *petalon*, leaf.] The leaves of the corolla of a flower, usually gaily coloured. *v.* Corolla.



Petals.

Petasites, (pet'a-sī'tēz). [Gk. *petasos*, umbrella.] Butter-bur: a plant belonging to Asteraceæ.

Petaurus, (pe-taw'rus). [Gk *petauron*, perch]. A small marsupial animal, also called flying squirrel of Norfolk Island.

Petavius, (pe-tā'vi-us). A crater in the moon, 78 miles in diameter.

Petinine, (pet'i-nin). A base obtained from Dippel's oil.

Petiole, (pet'i-ōl). [*Petiolus*, the Latin word.] Leaf-stalk, connecting the blade and stem.

Petiveria, (pet-i-vē'ri-a). [Mr. Petiver.] =Guinea-hen weed: the type of Petiveriaceæ.

Petiveriaceæ, (pet-i-ver-i-ā'se-ē). [Petiveria, *q v.*]=Petiveriaceæ: tropical shrubs and herbs with apetalous flowers, belonging to Sapindales.

Petrel, (pet'rel). [L. *Petrus*, Peter.] A marine bird belonging to Natatores. *Cape P.* =Pigeon. *Storm P.*= Mother Carey's chicken.


Petrel.

Petrifaction, (pet-ri-fak'-shun). [L. *petra*, stone; *facio*, I make.] The replacement of organic matter by carbonate of lime, flint, &c., so that the appearance is unchanged.

Petroleum, (pe-trō'le-um). [L. *petra*, rock, *oleum*, oil.]=Mineral naphtha: a compound of hydro-carbons, found near coal beds, forming a dark-coloured variety of bitumen.

Petrology, (pet-rol'ō-ji). [Gk. *petra*, rock; *logos*, discourse.] The science of rock-formations, a branch of geology.

Petromyzidæ, (pet-rō-mī'zi-dē). [Petromyzon, *q.v.*] Lampreys, &c.: a family of fishes, belonging to Cyclostoma, *q.v.*

Petromyzon, (pet-rō-mī'zon) [Gk. *petros*, stone; *myzo*, I suck.] = Lamprey: a fish, the type of Petromyzidæ; also called stone-sucker.

Petroselinum, (pet-rō-se-lī'num). [Gk. *petros*, rock; *selinon*, parsley.] Parsley: also considered as a sub-genus of Carum: an herb belonging to Apiaceæ.

Petrous bone, (pē'trus). [L. *petra*, rock.] A very hard projecting portion of the temporal bone.

Petty-whin=Genista Anglica.

Petuntze, (pe-tuns'). [The Chinese word.] A variety of orthoclase, probably a partially decomposed granite, used as a glaze for porcelain.

Pewter, (pū'ter). [*Peauter*, the Dutch word.] An alloy of lead and tin, to which bismuth and antimony are sometimes added.

Peyer's glands. Found in the mucous membrane lining the intestines; named after M. Peyer, a Swiss anatomist.

Pezophaps, (pez'ō-faps). [Gk. *pezos*, foot; *phaps*, small pigeon.] A large wingless turkey-like bird, recently extinct, also called solitaire.

Phacidiacei, (fas-i-di-ā'se-ī). [Gk. *phakoides*, lentil-like]=Maple moulds: fungi, with a hard and leathery hymenium.

Phacops, (fak'ops). [Gk. *phake*, lentil; *ops*, eye] A Silurian trilobite, named from the large eyes

Phænicothraupis, (fen-i-kō-thraw'pis). A bird of Nicaragua.

Phænogamous, (fen-og'a-mus). [Gk. *phaino*, I show; *gamos*, marriage.]=Phanerogamic, *q.v.*

Phaethornis, (fa-e-thor'nis). [Phaeton, *q v.*: Gk *ornis*, bird] A long-billed humming bird.

Phaeton, (fā'e-ton). [Classical.] Tropic birds: found only within the tropics, having short feet, wings, and strong curved toothed beaks, belong to Palmipedes.

Phalacrocorax, (fal-a-krō'ko-raks). [Gk. *phalakros*, bald; *korax*, crow]=Cormorant, *q.v.*: a bird belonging to Natatores.

Phalæna, (fa-lē'na). *v.* Elder-moth.

Phalanger, (fal'an-jer). [Phalanges, *q.v*]= Balantia: a marsupial animal, somewhat resembling the fox, named from the form of its feet, the phalanges of which are enclosed in a sheath. *Flying P.*=Didelphis pygmæa.

Phalanges, (fal'an-jēs). [Gk. *phalanx*, row.] The bones of the fingers or toes

Phalangidæ, (fal-anj'i-dē). [Gk. *phalanx*, row, *eidos*, form] = Harvest-men = false spiders: animals belonging to Arachnida.

Phalangits. One of Hœven's sub-divisions of Arachnids.

Phalanx, (fal'anx). [Gk. *phalanx*, a row] One of the phalanges, *q.v.*

Phalaris, (fal'a-ris) [Gk. *phalaros*, white] Canary seed: a plant belonging to Graminaceæ.

Phanerogamæ, (fan-er-og'a-mē). [Gk. *phaneros*, manifest, *gamos*, marriage]=Flowering plants. a primary division of plants, having visible fructification. *P. gymnospermes*= Gymnogens.

Phanerogamic, (fan-er-ō-gam'ik.) [Phanerogamæ, *q.v.*] Relating to flowering plants.

Phantasmagoria, (fan-tas-ma-gō'ri-a). [Gk. *phantasma*, spectre; *agora*, assembly] Used generally for any exhibition of images by means of shadows, as by the magic lantern; especially for a combination of two lanterns by which a gradual change from one set of shadows to another set is effected.

Pharaoh, (fā'rō). *Birds of P.*=P.'s chickens=Percnopterus leucocephalus, found at St. Jago *P.'s pence*=Nummulites of large size, of which the stone of the Egyptian pyramids is chiefly composed.

Pharmacolite, (far-mak'ō-līt). [Gk. *pharmakon*, drug; *lithos*, stone] A mineral, chiefly hydrated arseniate of calcium.

Pharmacopœia, (far-ma-kō-pē'ya). [Gk. *pharmakon*, drug; *poieo*, I make] A list of medicinal preparations, with particulars of their composition, &c.

Pharology, (fā-rol'o-ji). [Isle of Pharos: Gk. *logos*, discourse.] Description of lighthouses. Reflecting light=Catoptric: in which the light is reflected. Refracting light=Dioptric: in which the light is refracted. Holophotal light=Catadioptric: a variety of Dioptric light, in which all the rays are refracted parallel.

Pharyngeal, (fa-rin'jo-al). [Pharynx, *q.v.*] Related to the pharynx.

Pharyngobranchii, (far-ing-ō-brang'ki-ī). [Gk. *pharynx*, throat, *bragchia*, gills.] Leptocardii: fishes in which a perforated pharynx acts as gills, represented only by the Amphioxus, *q v.*; also called Cirrostomi and Lancelet, *q v*

Pharyngognathi. Used by Siebold for a subdivision of Malacopteri.

Pharynx, (far'inks). [*Pharygx*, the Greek word.] The funnel-shaped entrance to the alimentary canal, behind the mouth.

Phascaceæ, (fas-kā'se-ē). [*Phascum*, the typical genus.] A primary division of mosses, mostly small.

Phascogales, (fas-kō-gā'lēz) [Gk. *phascon*, a lichen, *gale*, pole-cat] A marsupial animal, the least carnivorous of the Sarcophaga.

Phascolarctos, (fas-kol-ark'tos). [Gk *phaskolos*, pouch, *arktos*, bear.] *P. fuscus*=Kangaroo bear.

Phascolomes, (fas-kol'ō-mēz). [Gk. *phaskolos*, pouch.] Used for a sub-division of Marsupiata, represented by the wombat.

Phascolomys, (fas-kol'ō-mis). [Gk. *phaskolos*, pouch; *mys*, mouse.] Mammalian animals known by fossils found, 1836 to 1867, in Victoria, Queensland, &c, 10 in number, in Australian Pleistocene rocks.

Phascolotherium, (fas-ko-lo-thē'ri-um). [Gk. *phaskolos*, pouch; *therion*, beast.] A small animal, probably resembling the kangaroo, of which a jaw and teeth were found in the Stonesfield slate rocks = Didelphis Bucklandii.

Phaseolus, (fas-ē'ō-lus). [The Latin name.] Kidney-bean: a plant belonging to Leguminaceæ.

Phases, (fā'zes). [Gk. *phasis*, appearance] Appearances. *P. of moon:* New Moon, Crescent Moon, Gibbous Moon, &c.

Phasma, (fas'ma). [Gk. *phasma*, sight.] An insect, the type of Phasmidæ.

Phasmidæ, (fas'mi-dē). [Phasma, *q.v.*] Walking-stick insects: insects, belonging to Orthoptera, which when at rest resemble pieces of twigs, leaves, &c. *v.* Mimicry.

Pheasant (fez'ant). [*Phasianus*, the Latin name.] A bird belonging to Rasores. *Horned P.* = Ceriornis Blythii. *P.'s-eye* =Adonis: a plant belonging to Ranunculaceæ.


Pheasant.

Phelloderma (fel-lō-der'ma). [Gk. *phellos*, cork; *derma*, skin.] A new genus of Verbenaceæ, from Chili; named from the covering of the nuts.

Phenaconic acid=Fumaric acid, *q.v.*

Phenakistoscope (fen-a-kis'to-skōp). [Gk. *phenakismos*, deception; *skopeo*, I see.] A series of figures drawn on a disc so that they appear to be in motion when the disc is made to revolve rapidly.

Phœnakite (fen'a-kīt). [Gk. *phoinix*, purple-red.] A mineral, chiefly silicate of glucinum.

Phenamide, (fen'a-mid). [*Pheno* and *Amide*] =Aniline, *q v.*

Phene, (fē'ne). [Gk. *phoinix*, purple-red.]= Benzol, *q v.*

Phenic acid, (fē'nik). [Phene, *q.v.*]=C_6H_6O =Carbolic acid=Phenyl-hydrate=Phenol: a valuable antiseptic substance obtained from coal-tar; also called phenate of hydrogen.

Phenol=Phenic acid *Methyl P.*=Kresol.

Phenomethol=Anisol, *q v.*

Phenose, (fē'nōs)=$C_6H_{12}O_6$: a non-fermentable variety of sugar.

Phenyl, (fē'nil). [Phene; Gk. *hyle*, material]=C_6H_5: the radicle of benzol. *Hydride of P.*=Benzene, *q v.* *P. benzamide* =Benzanilide, *q.v.* *P. urea* = Carbamilamide: a compound urea, *v.* Urea. *P. methylia* =Benzylia, *q.v.* *P. glycollic acid*=Mandelic acid=Formobenzoylic acid: obtained from bitter almonds.

Phenylene, (fen'i-lēn). [Phenyl, *q.v.*] C_6H_4: a hydrocarbon. *v.* Hydrocarbons, 6th series.

Phenylia, (fē-nil'i-a). [Phenyl, *q.v.*] = Aniline, *q.v.*

Phenylic (fe-nil'ik). [Phenyl, *q.v.*]=Carbolic acid.

Philadelphaceæ, (fil-a-del-fā'se-ē). [Philadelphus, the typical genus.]=Syringas: shrubs belonging to Grossales.

Philesiaceæ, (fī-lē-si-ā'se-ē). [Philesia, the typical genus.]=Philesiads: shrubs, sometimes climbing, with large flowers, belonging to Dictyogens.

Philomela, (fil-ō-mē'la). [Classical.]=Nightingale, *q.v.*

Philydraceæ, (fil-ī-drā'se-ē). [Gr. *phileo*, I love; *hydor*, water.]=Water-worts: herbs, with sessile flowers, belonging to Xyridales, found in China and New Holland.

Phlebenterism, (fleb-en'ter-izm). [Gk. *phlebs*, vein; *enteron*, intestine.] Having the alimentary canal hanging loosely and free in the thoracic cavity, as in Pycnogonidæ, &c.

Phleum, (flē'um). [The old Greek name.] Cats'-tail grass: a plant belonging to Graminaceæ.

Phlogopite, (flō'gō-pīt). [Gk. *phlox,* flame; *ops,* appearance.] A mineral of the mica group, common in metamorphic limestone.

Phlogiston, (flō-gis'ton). [Gr. *phlogistos,* burnt.] An hypothetical subtle substance, formerly supposed to be present in all combustible substances, and to evaporate when they were heated.

Phloretic acid, (flō're-tik). [Phloridzin.]= $C_9H_{10}O_3$: a crystalline acid substance obtained from phloridzin, found in bark of the roots of apple trees, &c.

Phloretin, (flō're-tin). [Phloridzin, *q.v.*]= $C_{15}H_{14}O$: a resinous matter obtained from phloridzin.

Phloridzin, (flō'rid-zin). [Gr. *phloios,* bark; *rhiza,* root]=Phlorizin= $C_{21}H_{24}O_{10}2H_2O$: a substance found in the bark of the apple and cherry trees, &c., from which sugar may be obtained

Phlorol, (flō'rol). An oil, highly refractive of light, found in phlorctate of calcium

Phlox-worts, (floks). [Gk. *phlox,* flame.]= Polemoniaceæ, *q v*

Phoca, (fō'ka). [*Phoke,* the Greek name.]= Seal: a marine carnivorous Mammalian animal, the type of Phocidæ. *P. ursina*=Sea-bear.

Phocæna, (fō-sē'na). [Gk *phokaina*, porpoise] =Porpoise: a marine animal belonging to Cetacea.

Phocidæ, (fō'si-dē). [Phoca, *q v.;* Gk. *eidos,* form.] Marine animals belonging to Pinnipedia. *v.* Carnivora.

Phœnicopterous, (fē-ni-kop'ter-us). [Gk. *phoinix,* purple-red, *pteron,* wing] Flamingo: a wading bird, with long legs and neck and large beak, belonging to Anatidæ.

Phœnix, (fē'niks) [*Phoinix,* the Greek name.] 1. An unimportant southern constellation. 2. Date tree: a variety of the palm tree.

Pholadomyæ, (fō-lad-om'i-ē). [Gk. *pholas,* lying hid] A mollusc, abundant in oolite, one species being still extant.

Pholidophorus, (fol-i-dof'o-rus). [Gk. *pholis,* scale, *phoreo,* I bear.] A ganoid fish, known by fossil remains, found in Lias rocks.

Phonautograph, (fō-naw'tō-graf). [Gk. *phone,* sound, *autos,* self; *grapho,* I write.] An apparatus for registering the number and extent of vibrations in sound.

Phonolite, (fō'nō-līt). [Gr. *phone,* sound, *lithos,* stone]=Clinkstone, *q.v.*

Phormium, (for'mi-um). [Gr. *phormos,* mat] New Zealand flax. a plant belonging to Liliaceæ.

Phormosoma, (for-mo-sō'ma). [Gr. *phormos,* mat; *soma,* body.] A sea-urchin. *P. placenta* first discovered in 1869 in Atlantic, N. of Scotland.

Phosgene gas, (fos'jēn). [Gr. *phos,* light; *gennao,* I produce]= $COCl_2$=Carbonic oxydichloride. a colourless suffocating gas.

Phospham, (fos'fam).= HN_2P=Phosphide of nitrogen and hydrogen: an amorphous substance.

Phosphate (fos'fāt). A compound of phosphoric acid and a base. *P. of lime:* one of the essential constituents of bone. *P. of soda and ammonia*=Microcosmic salt.

Phosphenes, (fos'fēnz) [Gk. *phos,* light; *phaino,* I appear.] Luminous images produced in darkness by pressure upon the eye-ball.

Phosphides, (fos'fīdz) [Phosphorus, *q v.*] Compounds of phosphorus with other elementary substances. *P. of hydrogen,* if liquid, takes fire spontaneously when in contact with oxygen.

Phosphites, (fos'fīts). [Phosphorus, *q v.*] Compounds of phosphorous acid and bases.

Phosphonitryle, (fos-fō-ni'tril). [Phosphorus and Nitrile, *q v.*]= PNO=Biphosphamide a white amorphous substance.

Phosphorescence, (fos-for-es'sens) [Gk. *phos,* light, *phoreo,* I bear] The emission of light (as in phosphorus, the glow-worm, &c) without combustion, especially after exposure to light.

Phosphoric, (fos-for'ik). [Phosphorus, *q.v.*] *P. acid*—1. *Ortho-P. A* : ordinary P. A.= H_3PO_4. combines with 3 equivalents of a base. 2 *Meta-P. A* = HPO_3, combines with 1 equivalent of a base. 3. *Pyro-P. A.*= $H_4P_2O_7$; combines with 4 equivalents of a base. *P anhydride*= P_2O_5: a white flocculent powder. *P. chloride*= PCl_5=Perchloride of phosphorus

Phosphorite (fos'for-īt). [Phosphorus, *q.v*]= Native bone phosphate: a variety of apatite.

Phosphoroscope, (fos-for'ō-skop). [Phosphorescence, *q v.;* Gk. *skopeo,* I show.] An apparatus to show the phorphorescence of bodies, such as uranium compounds, that emit light but for a very short period.

Phosphorous, (fos'for-us). [Phosphorus, *q.v.*] =*P. acid*=Dyhydric phosphite. *P. anhydride* = P_2O_3. *P. chloride* = PCl_3 = Terchloride of phosphorus: a volatile fuming colourless liquid.

Phosphorus (fos'for-us). [Gk. *phos,* light; *phoros,* bearing] P''': a waxy, semi-transparent, very inflammable substance, which is luminous in the dark, and is found in several forms. *Amorphous P.*=*Red P.*, oxidises but very slowly, and burns only at 500° F. *Vitreous P* =Ordinary P. *P group of elements.* phosphorus, arsenicum, and antimony, all forming alkaline compounds with hydrogen, and acid compounds with oxygen.

Phosphuretted-hydrogen = H_3P = Phosphorous trihydride: a colourless very inflammable fœtid gas, which usually takes fire spontaneously when in contact with oxygen, owing to the presence of liquid phosphide of hydrogen.

Photoelectric microscope. A microscope illuminated by the electric light, so that the image can be thrown, greatly magnified, on a screen in a darkened room.

Photogen, (fō'tō-jen). [Gk. *phos,* light; *gennao,* I produce.]=Paraffin oil, *q.v.*

Photograms, (fō'tō-gramz). [Gk. *phos,* light, *gramma,* writing] Light-writing= Photograph, but used especially for photographic records, such as of variations of temperature, &c.

Photography, (fō-tog'ra-fi). [Gk. *phos,*

light; *graphe*, writing.] The action of light upon sensitive substances, such as iodide of silver, by which portraits and views can be taken: the sunlight decomposes the iodide of silver, and the portion not acted on is washed off.

Photometer, (fō-tom'e-tẹr). [Gk. *phos*, light; *metron*, measure.] An instrument for the measurement of the relative intensities of two lights.

Photosphere, (fō'tō-sfēr). [Gk. *phos*, light; *sphaira*, sphere.] The bright surface of the sun or other star.

Photozincography, *v.* Zincography.

Phragmites, (frag-mī'tēz). [The Greek name.] Reed: a plant belonging to Gramineæ.

Phryganea, (fri-gā'ne-a). [Gk. *phryganon*, faggot of wood.] Caddis-fly: an insect connecting Neuroptera with Lepidoptera.

Phthalamic acid, (thal'a-mik). [Phthalic and Amide, *q.v.*]$=C_8H_7NO_3$=Amidated phthalic acid.

Phthalic acid, (thal'ik). [Naphthalin, *q v.*] $=C_8H_6O_4$ = Naphthalic acid: a crystalline acid substance, obtained from naphthalin.

Phthisis, (thī'sis). [Gk. *phthio*, I waste away] Consumption: a phase of disease, caused by the formation of tubercles in the lungs, and resulting in gradual decay.

Phylactolæmata, (fī-lak-tō-lē'ma-ta.) [Gk. *phylaktos*, guarded, *laimos*, throat.] A primary division of Polyzoa, including animals in which the gullet-entrance is protected by a covering.

Phyllocyanin, (fil-lō-sī'a-nin). [Gk. *phyllon*, leaf, *kyanos*, blue.] The blue colouring principle of chlorophyll. *cf.* Phylloxanthin.

Phyllodium, (fil-lō'di-um). [Gk. *phyllon*, leaf, *eidos*, form.] = Phyllodes: a general term for any leaf-like expansion, especially the petiole when flattened or expanded.

Phyllopoda, (fil-lop'o-da). [Gk. *phyllon*, leaf; *pous*, foot.] Crustacean animals having a resemblance to trilobites, found fossil from Cambrian to Recent rocks, excepting in Cretaceous.

Phylloxanthin, (fil-loks-an'thin). [Gk. *phyllon*, leaf; *xanthos*, yellow.] The yellow colouring principle of chlorophyll. *cf.* Phyllocyanin.

Phylloxera, (fil-loks-ē'ra). [Gk. *phyllon*, leaf; *xeros*, withered.] An insect, found in N. America, that destroys vines.

Physalia, (fī-sā'li-a). [Gk. *physallis*, bubble] A marine invertebrate animal belonging to Acalephæ. *P. pelagicus* = Portuguese man-of-war = Guinea-ship: an inflated blue bladder, with a mass of long crimson tentacles.

Physeter, (fī-sē'tẹr). [Gk. *physeter*, bellows.] Spermaceti whale: an animal belonging to Cetaceæ.

Physetoleic acid, (fī-sē-tō'le-ik). [Physeter and Oleic, *q.v.*]$=C_{10}H_{30}O_2$ an acid obtained from the oil of the spermaceti whale.

Physic, (fiz'ik). [Gk. *physis*, nature] *P. nut:* purgative fruits of Ricinus Americanus.

Physical, (fiz'i-kal). [*Physikos*, the Greek word.] Natural: connected with, or relating to, physics. *P. geography*=Physiography.

Physics, (fiz'iks). [Gk. *physis*, nature.] The science of force or energy when it takes the form of light, sound, heat, or electricity.

Physiography, (fiz-i-og'ra-fi). [Gk. *physis*, nature; *graphe*, writing.] = Physical geography: an account of the surface of the globe, and of the causes which modify it.

Physiology, (fiz-i-ol'ō-ji). [Gk. *physis*, nature; *logos*, discourse.] The science of the nature and functions of organised bodies *Human P.:* the branch of physiology relating to man.

Physiozoa, (fiz-i-ō-zō'a). [Gk. *physis*, nature; *zoe*, life.] Fitzinger's term for Annulata, Radiata, and Vermes.

Physomycetes, (fī-sō-mī-sē'tēz). [Gk *physa*, bladder; *mykes*, mushroom.] = Moulds: a primary division of Fungales.

Physophoridæ, (fī-sō-for'i-dē). [Gk. *physa*, bladder; *phoreo*, to carry.] A sub-division of Marine Hydrozoa, having swimming bladders.

Physopoda, (fī-sop'o-da). [Gk. *physa*, bladder; *pous*, foot.] Insects.

Physospermum, (fī-so-spẹr'mum). [Gk. *physa*, bladder; *sperma*, seed.] Bladder-seed: a plant belonging to Apiaceæ.

Physostigma, (fī-sō-stig'ma). [Gk. *physa*, bladder, Stigma, *q v.*] Calabar bean: a plant.

Physostigmia, (fī-sō-stig'mi-a). [Physostigma, *q v.*]$=C_{15}H_{21}N_3O_2$: a powerful poisonous basic substance obtained from the Calabar bean, which produces paralysis, and is antagonistic in its action to atropia.

Phytelephas, (fī-tel'e-fas). [Gk. *phyton*, plant, *elephas*, ivory]=Vegetable ivory: a plant belonging to Pandanaceæ, the seeds of which, when dry, are hard and white like ivory.

Phyteuma, (fī-tū'ma). Rampion: an herb belonging to Campanulaceæ.

Phytocrene, (fī'tō-krēn). [Gk. *phyton*, plant; *krene*, fountain.]=Water-vine: a plant, with soft and porous stem, containing much water, belonging to Artocarpaceæ.

Phytolaccaceæ, (fī-tō-lak-ā'se-ē). [Gk. *phyton*, plant; *lakka*, lac.]=Phytolaccads: herbs, belonging to Chenopodales; named from the colour of the fruit.

Phytophaga, (fī-tof'a-ga). [Gk. *phyton*, plant; *phago*, I eat.] 1. Animals feeding on vegetable food only. 2. A beetle=Eupoda.

Phytophagoida, (fī-tō-fa-goi'da). [Phytophaga, *q.v.*; Gk, *eidos*, form.] Animals subsisting on vegetable food.

Phytosaurus, (fī-tō-saw'rus). [Gk. *phyton*, plant; *saurus*, lizard.] *v.* Labrinthodon.

Phytotoma. Ra-ra: a S. American sparrow-like bird; also called plant-cutter.

Phytotomy, (fī-tot'ō-mi). [Gk. *phyton*, plant; *tome*, section.] Anatomy of plants. *cf.* Zootomy.

Phytozoa, (fī-tō-zō'a). [Gk. *phyton*, plant; *zoon*, animal.] Plant-animals: a name given to Infusoria, &c., on the supposition that they partake of both animal and vegetable natures.

Pia-mater, (pī'a-mā'tẹr). [L. *pius*, soft; *mater*,

mother.] A vascular fibrous tissue closely investing the brain and spinal cord.

Pica, (pī'ka). [The Latin name.] Magpie, &c. *v.* Picæ.

Picæ, (pī'sē). [Pica, *q.v.*] Magpies, &c.: a family of birds, with short legs, sharp bills, and building their nests in trees; include a large number of varieties.

Picamar, (pik'a-mar). [L. *pix*, pitch; *amarus*, bitter.] A bitter, oily substance obtained from tar.

Pico, (pī'kō). An isolated peak in the moon, 7000 ft high.

Picoline, (pik'ō-lin). [L. *pix*, pitch.]=C_6H_7N: an oily liquid obtained from tar, a base belonging to the pyridine series.

Picramic acid, (pik'ra-mik). [Picric and Amide, *q v.*]=$C_6H_5N_3O_5$: an amidated acid derived from picric acid.

Picric acid, (pik'rik). [L. *picrus*, bitter.] $C_6H_3N_3O_7$ = Carbazotic acid, *q v.*; named from its bitter taste.

Picris, (pik'ris). [L. *pikris*, bitter.] An herb, with milky juice, belonging to Asteraceæ.

Picrotoxin, (pik-rō-toks'in). [Gk. *pikros*, bitter; *toxicon*, poison.]=$C_5H_6O_2$: a bitter, poisonous substance found in Cocculus Indicus.

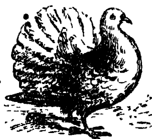
Picryl, (pik'ril). [Picric, *q.v.*, Gk. *hyle*, material.] The radicle of picric acid, &c

Picus, (pī'kus). [The Latin name.] Woodpecker: a small insectivorous climbing bird.

Piezometer, (pī-e-zom'e-ter). [Gk. *piezo*, I compress, *metron*, measure.] An instrument for measuring the compressibility of liquids

Pig, (pig). [*Pige*, the A.-S. name.]=Sus: an omnivorous quadruped, the type of Suidæ, *q.v.* *P.-iron:* a block of rough cast-iron.

Pigeon, (pij'un) [The French name.]=Columba: a poultry-like bird belonging to Rasores. *v.* Columbidæ. *Tooth-billed P.* = Didunculus strigirostris, *q v.* *P. pea:* seed of Cajanus or Cytisus cajan; also called angola tree.


Pigeon.

Pigment, (pig'ment). [L. *pigmentum*, the Latin word.] Any substance used as a paint. *P. cells:* in the eye, lining the choroid coat, and in contact with the retina.

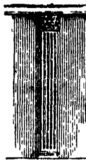
Pigments. Paints: *e g.*, *black*, burnt ivory, wood, &c.; *blue*, lapis lazuli, &c; *brown*, bitumen, &c.; *green*, carbonate of copper, oxide of chromium, &c.; *red*, bisulphide of mercury, &c., *white*, carbonate of lead, barytes, &c.; *yellow*, chromate of lead, &c.

Pignut. 1. Fruit of Carum bulbocastanum. 2. Fruit of Bunium flexuosum.

Pike, (pik). [*Pique*, the French name.]= Esox lucius: a fish belonging to Esocidæ, *q.v.* *Bony P.*=Lepidosteus.


Pike.

Pilaster, (pi-las'ter). [*Pilastre*, the French word.] A flat column, forming part of a wall, of which only a small portion projects from the surface.


Pilaster.

Pilchard, (pil'chard). = Clupea pilchardus: a herring-like fish, belonging to Clupeidæ.

Pile, (pil). [L. *pila*, pillar.] *Dry P.:* a voltaic battery in which a solid substance (such as paper) which absorbs water is used, instead of a liquid. *P. of Volta:* a series of discs of copper and zinc, arranged as a galvanic battery. *P. wort*=Ranunculus picaria. *P- dwellings*=Lake dwellings, *q.v.* *Nobili's P.*, *v.* Nobili's

Pilidium, (pi-lid'i-um). [Gk. *pilidion*, small cap.] The larva of Nemertes, named from its helmet shape.

Pilifera, (pil-if'er-a). [L. *pilus*, hair; *fero*, I bear.] De Blainville's term for Mammalia.

Pill. *P beetle* = Byrrhus: named from the rounded shape. *v.* Byrrhidæ. *P. wort*= Pilularia, *q.v.*

Pillars of the diaphragm. Muscular fibres connecting the diaphragm with the spinal column

Pilot. *P. fish*=Naucrates ductor=Gasterosteus ductor: belongs to Scomberidæ; named from being supposed to guide sharks to food. *P whale*=Globiocephalus svineval.

Pilton group=Upper Devonian *v.* Devonian.

Pilularia, (pil-u-lā'ri-a). [L. *pilula*, pill.] Pillwort an aquatic plant belonging to Marsileaceæ.

Pimelic acid, (pim'e-lik). [Gk. *pimele*, fat.] =$C_7H_{12}O_4$: a crystalline substance formed from the action of nitric acid on oleic acid.

Pimelite, (pim'e-līt). [Gk. *pimele*, fat; *lithos*, stone] A mineral, chiefly silicate of nickel, &c.

Pimento, (pi-men'to). [Sp. *pimento*, Indian pepper.]=Eugenia P.=Myrtus P : a tree belonging to Myrtaceæ, the fruit of which is allspice, *q.v.*

Pimpernel, (pim'per-nel). [*Pimprenelle*, the French name.]=Anagallis, a plant belonging to Primulaceæ. *Bastard* P =Centunculus. *Yellow* P.=Lysimachia nemorum.

Pimpinella, (pim-pi-nel'la). [L. *bis*, twice; *pennula*, little wing] Burnet saxifrage: an herb belonging to Apiaceæ, named from the leaves being doubly pinnated. *P. anisum*= Anise.

Pinaceæ, (pi-nā'se-ē) [Pinus, *q.v.*]=Conifers: evergreen resinous trees, with naked flowers, belonging to Gymnogens.

Pinchbeck, (pinch'bek). A gold-coloured alloy of ¼ zinc and ¾ copper.

Pine, (pīn). [*Pinus*, the Latin name]=Pinus, *q v.* *Labrador P.*=Pinus Banksiana. *Jersey P.*=Pinus inops. *Scotch P.*= Pinus sylvestris. *Ground P.* =Ajuga chamæpitys *Nut P* =Pinus monophyllus. *P. apple*=Ananassa sativa. *P. marten* = Martes abietum = Mustela abietum. *P. sawfly*


Pine-apple.

=Lophyrus pini: belongs to Hymenoptera. *P. wool*=Leaves of pine tree.

Pine-apple oil. $C_2H_5.C_4H_7O_2$: a mixture of butyric ether and oil.

Pineal gland, (pin'ē-al). [L. *pinna*, fir cone.] A small gland in the third ventricle of the brain; an outgrowth of the prosencephalon, also called conarium.

Pinguicula, (pin-gwik'ū-la). [L. *pinguis*, fat.] Butter-wort: an herb belonging to Lentibulariaceæ; named from its greasy leaves.

Pinic acid, (pī'nik) [Pinus, *q.v.*]=$C_{20}H_{30}O_2$: obtained from rosin.

Pinion, (pin'yun). [L. *penna*, wing.] A wheel with a small number of teeth on its circumference.

Pinite, (pin'īt). [Pini Mountains.] A mineral, chiefly silicate of aluminum.

Pink, (pingk). [The Dutch name.] 1. Dianthus: an herb belonging to Caryophyllaceæ. *Sea-P.*=Armeria. *P. sensitive plant* of N. Mexico=Schrankia uncinata. 2. A pale-red colour, a compound of red and white, named from the colour of the flower of Dianthus.

Pinna, (pin'na). [L. *pinna*, feather.] 1. A general term for any organised process, as a wing, a feather, a fin, &c. 2. A molluscous animal belonging to Mytilidæ.

Pinnace (pin'nās). [*Pinasse*, the French word.] A small vessel propelled by oars and sails, used for officers of low rank.

Pinnata. Giebel's term for whales, dolphins, &c.

Pinnifera (pin-nif'ẹr-a). [L. *pinna*, fin; *fero*, I bear.] De Blainville's term for fishes.

Pinnigrada, (pin-ni-grā'da). [L. *pinna*, fin, *gradior*, I walk.] Aquatic carnivora: animals, such as the seal, which move by fins. 2. Sometimes used for Crinoidea.

Pinnipedia, (pin-ni-pē'di-a) [L. *pinna*, feather, *pes*, foot.] A general term for animals with webbed feet or with fins, used by Bonaparte for a sub-division of Mammalia, and also for aquatic carnivora.

Pinnule, (pin'nūl). [*Pinnula*, the Latin word.] =Barb: the secondary branch from the quill of a feather.

Pintada, (pin-tā'da) =Numida cristata: a bird; also called guinea hen.

Pintail. *P. ducks*=Dafila: birds belonging to Natatores.

Pinus, (pī'nus). [The Latin name.]=Pine, fir, &c.: a tree belonging to Pinaceæ: some species of which give turpentine, pitch, Hungarian balsam, &c.

Piosoca A long-legged water-fowl of Brazil =Parra jacana.

Pipa, (pī'pa) =Surinam toad: has no tongue; and dorsal pouches, one for each egg.

Pipe. 1. A tube of wood or metal used for the purpose of producing a musical note. 2. A wine measure=126 gallons, usually. *P. fishes* =Syngnathidæ, *q.v.* *P. stone*: a variety of clay-slate, used for making pipes. *P. mouth* = Fistularidæ, *q.v.* *P. worts* = Eriocaulaceæ, *q.v.*

Piper, (pī'pẹr). [The Latin name.] 1.=Cidaris papillata: a star-fish, abundant at 250 and 500 fathoms in British seas, formerly rare. 2. A plant, the type of Piperaceæ, *q.v.* *P. betel*, *v.* Betel.

Piperaceæ, (pip-ẹr-ā'se-ē). [Piper, *q.v.*] = Pepper-worts: aromatic tropical herbs and shrubs, with jointed stems and sessile flowers, belonging to Piperales and approximating to Endogens.

Piperales, (pip-ẹr-ā'lēz). [Piper, *q.v.*] Plants with achlamydeous flowers, minute embryo, with much albumen, forming a division of hypogynous Exogens.

Piperine, (pip'ẹr-īn). [Piper, *q.v.*]=$C_{17}H_{19}NO_3$: a crystalline alkaline base found in pepper.

Piping crow.=Banta: a bird of N. S. Wales.

Pipit, (pī'pit).=Anthus: a lark-like bird, belonging to Dentirostres, also called tit-lark.

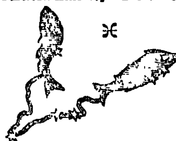
Pippul, (pip'pul). *P. tree*=Bo tree=Ficus religiosa.

Pipra, (pip'ra). Manakin: a small sparrow-like bird.

Piprinæ, (pip-rī'nē). [Pipra, *q.v.*] Manakins: a family of small sparrow-like birds belonging to Ampelidæ.

Pirate spider.=Pirosa piratica.

Pisces, (pis'sēz). [The Latin name.]=1. Fishes: vertebrate animals adapted for living in water, which breathe by means of branchiæ, have limbs modified into fins, cold red blood, and also median fins; but never either amnion nor allantois. *v.* Fish, *v.* Fishes. 2. The Fishes: the twelfth sign of the Zodiac.



Pisces.

Pisciculus, (pis-ik'ū-lus) [L. *pisciculus*, little fish.] Stickleback: a small fish belonging to Acanthopterygii.

Piscidia, (pis-sid'i-a). [L. *piscis*, fish; *cædo*, I kill.]=Dogwood: a plant belonging to Leguminaceæ, the bark of which is used to stupefy fish.

Piscis Australis, (pis'sis aw-strā'lis). [The Latin name.]=The Southern Fish: a small southern constellation, of which Fomalhaut is the chief star.

Pisolite, (pī'sō-līt). [L. *pisum*, pea; Gk. *lithos*, stone.]=Peagrit: a variety of oolite, in which the grains are of large size. *P. limestone:* intermediate between secondary and tertiary rocks.

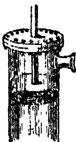
Pissophane, (pis'sō-fān). [Gr. *pissa*, pitch; *phaino*, I show.] A mineral named from its resemblance to pitch, chiefly hydrated sulphate of aluminum and iron.

Pistiaceæ, (pis-ti-ā'se-ē). [Pistia, the typical genus.]=Duckweeds: plants having stem and leaf in one, forming a frond, on the edge of which are naked, unisexual flowers: belong to Arales; also called Lemnaceæ.

Pistachia, (pis-tā'shi-a). [*Pistacium*, the Latin name.] A tree belonging to Anacardiaceæ, from which mastic is obtained.

Pistil, (pis'til). [L. *pistillum*, pestle.] The central portion of a flower which contains the seed, and which, when ripened, becomes the fruit: consists of ovary, style, and stigma.

Piston, (pis'ton). [The French word.] A disc of wood or iron working air-tight in a cylinder; in a steam-engine the piston is moved to and fro by the force of the steam, which it communicates to the machinery.


Piston.

Pisum, (pī'sum). [The Latin name.] A plant belonging to Leguminaceæ.

Pitch, (pich). [1 and 2. *Pix*, the Latin word; 3 and 4. F. *pic*, peak.] 1. A hydrocarbon obtained from coal-tar; a resin-like variety of bitumen. 2. A resin obtained from Pinus sylvestris and other trees. 3. The pitch of a musical note, depending upon the number of vibrations. 4. *P. of a screw:* the distance through which it moves in one turn. *P. stone:* a mineral: (1) a variety of obsidian; (2) a silicate of aluminium. *Mineral P.*=Asphalt. *Concert P.* varies from 512 to 538 vibrations per second for C on the treble clef.

Pitchblende, (pich'blend). [*Pech-blende*, the German name.] An amorphous mineral, chiefly uranium oxide, with copper, lead, iron, &c.

Pitcher, *P. plant:* 1. A slender climbing plant, which has pitcher-shaped leaves=Nepenthes, *v.* Nepenthaceæ. 2.=Darlingtonia Californica: a plant of California. *P. leaves:* also called ascidia.

Pith, (pith). [*Pið'a*, the A.-S. word.] The soft, spongy, cellular substance found in the centre of exogenous stems and branches.

Pithecia, (pi-thē'si-a). An American monkey with a bushy tail.

Pitheous, (pi-thē'kus). [Gk. *pithekos*, monkey.] Apes=Simia: tailless monkeys, having teeth in the same number as man. *P. leuciscus*=Gibbon, of Java. *P. satyrus*=Orang-outang.

Pitta, (pit'ta). A large thrush-like bird, having long legs and a very short tail; found only in Sumatra and adjacent islands.

Pittosporaceæ, (pit-to-spo-rā'se-ē). [Gk. *pitta*, gum, *sporos*, seed.]=Pittosporads: trees and shrubs, with symmetrical flowers and small embryos, with much albumen, belonging to Berberales, found chiefly in New Holland; named from the resinous seeds.

Pituitary, (pi-tū'i-ta-ri). [L. *pituita*, phlegm.] Relating to phlegm. *P. body:* in the brain, at the front of the notochord, named from being thought to secrete phlegm.

Placenta, (pla-sen'ta). [L. *placenta*, cake.] A developed condition of the chorion, by which the young is nourished previous to birth, and which in man is discoid in shape; also called "after-birth."

Placentalia, (pla-sen-tā'li-a). [Placenta, *q.v.*] Term used by Owen for all Mammalia except Marsupialia and Monotremata.

Placentiferous, (pla-sen-tif'er-us). [Placenta, *q.v.*; *ferro*, I carry.] Bearing a placenta.

Placodus, (plak'o-dus). [Gk. *plax*, plate; *odous*, tooth.] A reptile, known only by fossil remains, found in Muschelkalk rocks; named from having short, flat teeth.

Placoid, (plak'oid). [Gk. *plax*, plate; *eidos*, form.] *P. fishes:* having irregular bony plates and spines on the skin; rare as fossils.

Placoidei, (pla-koi'de-ī). [Gk. *plax*, plate; *eidos*, form.]=Selachii; sharks and rays: a sub-division of Elasmobranchii, *q.v.*

Plagiaulax, (plā'ji-aw-laks). [Gk. *plagios*, oblique; *aulax*, groove.] A mammal, fossil remains of which are found in Purbeck beds; named from the oblique grooves in the teeth.

Plagioclastic, (plā-ji-ō-klas'tik). [Gk. *plagios*, oblique; *klasis*, fracture.] *P. minerals:* have cleavages that are oblique to each other.

Plagiostoma, (plā-ji-os'to-ma). [Gk. *plagios*, oblique, *stoma*, mouth.] An oyster-like animal, known by fossil remains found in Lias rocks.

Plagiostomi, (plā-ji-os'to-mi). [Gk. *plagios*, oblique; *stoma*, mouth.] Used by Siebold for a sub-division of fishes, including the shark and ray, forming a sub-division of Elasmobranchii.

Plaice, (plās). [*Platessa*, the Latin name.]=Platessa vulgaris: a flat fish, belonging to Pleuronectidæ.

Plan, (plan). [L. *planus*, flat.]=Map on a large scale; view looking vertically downward.

Plane, (plān). [L. *planus*, level.] A level surface. *P. geometry:* the geometry of plane surfaces. *P. sailing*, *v.* Sailing. *P. trigonometry*, *v.* Trigonometry. *P. of the Ecliptic:* the plane in which the earth moves in its revolution round the sun, and to which the orbits of the other planets closely approximate. *Scotch P.*=Acer pseudoplatanus; a tree, named from its broad leaves.

Planes. Shrubs and trees belonging to Urticales=Platanaceæ, *q.v.*

Planetoids, (plan'et-oidz). [Planet, *q.v.*; Gk. *eidos*, form.]=Minor Planets, *q.v.*

Planets, (plan'ets). [*Planeta*, the Latin name.] Wandering stars; bodies resembling our globe, belonging to the solar system (*i.e.*, revolving round the sun), which shine only by the reflection of the sun's light. *Superior P.:* those farther from the sun than the earth is; Mars, Jupiter, Saturn, Uranus, and Neptune. *Inferior P.:* those between the sun and the earth; Mercury, Venus, and possibly Vulcan. *Minor P.*=Asteroids: between Mars and Jupiter; see Minor Planets. *Major P.:* Jupiter and the planets beyond it, Saturn, Uranus, and Neptune. *Terrestrial P.:* a term used to comprise the earth and the planets approximating to it; Mercury, Venus, and Mars; the planets between the sun and the Minor Planets.

Planimeter, (plan-im'e-ter). [L. *planus*, flat; Gk. *metron*, measure.] Any instrument for the measurement of plane surfaces.

Planorbis, (plan-or'bis). [L. *planus*, flat; *orbis*, circle.] A fresh-water snail-like, molluscous animal, belonging to Gasteropoda.

Plantaginaceæ, (plan-ta-jin-ā'se-e). [Plantago, *q.v.*]=Rib-worts: herbs belonging to Cortusales.

Plantago, (plan-tā'gō). [L. *planta*, sole of the foot.]=Plaintain; rib-grass; an herb the type of Plantaginaceæ.

Plantain, (plan'tān). [The French name.] 1 Musa sapientum: an endogenous tree, resembling the banana, belonging to Musaceæ. 2. Plantago, an exogenous plant, belonging to Plantaginaceæ. Water plantain = Alisma. *P. eater*=Musophaga, *q.v.*


Plantain

Plantigradē, (plan'ti-grād). [L. *planta*, sole of the foot; *gradior*, I walk.] A general term, applied to all animals, such as the bear, badger, and also man, which place the whole sole of the foot on the ground when walking

Plant-lice = Aphides: insects belonging to Homoptera.

Plants, (plants). [L. *planta*, a young tree] Living beings, usually without sensation, rooted, with no mouth or stomach, composed of binary or ternary compounds, retain carbon, and exhale oxygen, form organic compounds which serve as food for animals, form the vegetable kingdom; few only in sea below 50 fathoms, none below 200 fathoms.

Plants, classification of. *v.* Botanical systems

Plasma, (plaz'ma). [Gk *plasso*, I mould.] The colourless fluid of the blood, in which the red and white corpuscles are suspended, a general term for any fluid by which animals or plants are immediately nourished.

Plasmogony, (plaz-mog'o-ni). [Plasma, *q v*] The generation of an organism from a plasma, or organic formative fluid.

Plaster of Paris. Calcined and powdered gypsum, used in taking plaster casts, and as a cement; named from being found in large quantities near Paris

Plastic clay=Woolwich and Reading series, *q.v.* A sub-division of Lower Eocene rocks, the clay is used for pottery.

Plastron, (plas'tron). [Gk. *emplastron*, plaster.] The ventral shell or shield of turtles and tortoises.

Platalea, (plat-al'e-a). [The Latin name.] Spoonbill: a heron-like bird, belonging to Ardeidæ; named from the form of its beak.

Platanaceæ, (plat-a-nā'se-ē). [Platanus, *q v.*] Planes: trees, chiefly found in N. America, belonging to Amentales.

Platanus, (plat'a-nus). [The Latin name.] Plane-tree: a tree, the type of Platanaceæ.

Plate, (plāt). [*Plat*, the French word.]. *P. electrical machine:* a plate usually of vulcanite or glass, fixed in a frame, so as to be electrified by friction when made to revolve. *P girder:* one composed of a number of plates of iron. *P. glass:* a fusible variety of glass, consisting chiefly of silicates of sodium and calcium, named from being cast for use in large plates

Platessa, (plat-es'sa). [The Latin name.] Plaice: a flat fish, belonging to Pleuronectidæ.

Platinamine, (plat'in-a-min). [Platinum and Amine] $PtH_6N_2O_2$: a platinum base, also called Gerhardt's base.

Platinic, (pla-tin'ik). [Platinum, *q.v.*] Related to platinum.

Platinicum, (pla-tin'i-kum). Term used to express the platinum in Platinamine, and other compounds, in which it occurs as Ptiv.

Platinum, (plat'in-um). [Sp. *platina*, little silver.] Pt.: one of the noble metals: a white, hard, lustrous, tenacious metal, almost infusible; abundant in California. *P., Native:* almost pure, with cubical crystallisation. *Black P.*=P. black: finely divided platinum. *P. bases:* basic compounds of platinum and ammonia: platinamine, platosamine, &c. *P. lamp:* a coil of platinum wire, heated, so as to be luminous, by a galvanic current being passed through it *Spongy P.*, *v* Spongy

Plato, (plā'to). [Classical.] A crater in the Moon, 70 miles in diameter.

Platosamine, (plat'ō-sa-mīn). [Platinum and Amine.]=PtH_6N_2O=Reiset's second base: a basic compound of platinum and ammonia.

Platten, (plat'ten). A plate of wood or iron, used in the printing press, to press the paper on the type.

Platy, (plat'i) [Gk. *platys*, broad.] A prefix, implying breadth.

Platyelminthes, (plat-i-el-min'thēz) [Gk. *platys*, broad, *helmins*, worm.] A sub-division of Annuloida by Rolleston. Tapeworms, &c.

Platymeter, (plat-im'e-ter). [Gk. *platys*, broad; *metron*, measure.] An apparatus to measure the inductive capacity of dielectrics.

Platypus, (plat'i-pus). [Gk. *platys*, broad; *pous*, foot.] Duck-bill: a burrowing quadruped, having wide flattened snout and large flattened claws, found in N. S. Wales =Ornithorhynchus, *q v.*

Platyrrhine family, (plat'i-rīn) [Gk *platys*, broad; *rhines*, nostrils.] Quadrumanous animals, such as the marmoset, &c., found only in S. America; named from the nostrils being far apart.

Plectognathi, (plek-tog'na-thi). [Gk. *plektos*, connected, *gnathos*, jaw.] A sub-division of fishes, in which the cheek-bones are firmly united with the jaws; *e.g*, trunk-fishes, file-fishes, &c.

Pleiades, (plī'a-dēz). [Classical.] A group of seven stars, in the shoulder of Taurus; also called the Seven Virgins.

Pleiocene=Pliocene, *q.v.*

Pleiosaurus, (plī-ō-saw'rus). [Gk. *pleion*, more, *sauros*, lizard.] A marine reptile with large head, short neck, and paddles, resembling those of the plesiosaurus.

Pleochroism, (plē-ok'rō-izm). [Gk. *pleion*, more; *chroma*, colour.] The variation of colour in some crystals when seen by transmitted light, or in different directions.

Pleonaste, (plē'o-nast). [Gk. *pleonastos*, abundant] A dark variety of spinel.

Plesiosauria, (plē-zi-ō-saw'ri-a). [Gk. *plesios*, near; *saura*, lizard.]=Extinct marine reptiles, found in secondary strata. *v.* Plesiosaurus.

Plesiosaurus, (plē-zi-ō-saw'rus) [Gk *plesios*, near; *saura*, lizard] An oolitic reptile with crocodile-like head, known by fossil remains, chiefly vertebræ, found in Lias and Oolitic rocks, named from its fossil remains being found near those of the ichthyosaurus.

Pleura, (plō'rā). [Gk. *pleura*, rib.] A serous membrane enclosing the lung.

Pleuro, (plō'rō). [Gk. *pleura*, rib] A prefix, implying some relation to the pleura or lungs.

Pleurodont, (plō'rō-dont). [Gk. *pleura*, rib; *odous*, tooth.] *P teeth:* those which are fastened by one side of the fang anchylosing with the jaw.

Pleurodonta, (plō-rō-don'ta) [Gk. *pleuron*, side; *odous*, tooth] A sub-division of Iguanidæ, *q.v.*, having pleurodont teeth

Pleuronectes, (plō-rō-nek'tez) [Gk. *pleura*, side, *nektes*, swimmer] = Pleuronectidæ a family of fishes, in which the body is flattened and the eyes both on one side of the head, includes the plaice, sole, flounder, &c.

Pleuronectidæ=Pleuronectes, *q v.*

Pleurotoma, (plō-rot'o-ma) [Gk. *pleuron*, side, *tome*, incision.] = Turricula: a carnivorous molluscous animal, with a univalve shell, found fossil from Oolite to Eocene rocks.

Pleurotomaria, (plō-ro-tō-mā'ri-a). [Gk. *pleuron*, side · *tome*, incision] A gasteropodous mollusc, with spiral univalve shell, found in Oolite rocks.

Plexus, (pleks'us) [L *plexus*, twisted] Network, used, especially, for a network of nerves, &c

Plinth, (plinth). [*Plinthos*, the Greek word] A square projecting base, usually forming the lowest portion of a column.

Pliocene,(pli'ō-sēn) [Gk. *pleion*, more; *kainos*, recent.]=Upper Tertiary formation: including the Red and White Crag of Suffolk, the Norwich Crag, &c, in which existing species of Testacea are more numerous than extinct species.

Ploceinæ, (plō-sī'nē) [Ploceus, the typical genus.] Widow-birds, weaver-birds, &c.: a sub division of Fringillidæ, *q.v.*

Plotus, (plō tus). [Gk. *plotos*, sailing] Darter: a large aquatic bird, with long neck, pointed bills, and strong short feet, belonging to Pelecanidæ.

Ploughman's spikenard=Inula, *q.v.*

Plover, (plō'ver). [*Pluvier*, the French name.]=Charadrius: a wading-bird, belonging to Charadriadæ.

Plum, (plum). [*Pluma*, the A-S. name] The edible fruit of Prunus, *q.v.*

Plumbaginaceæ, (plum-bā-jin-ā'se-e). [Plumbago, *q v*]=Lead-worts: herbs, with monopetalous flowers, belonging to Cortusales.

Plumbago, (plum-bā'go). [L. *plumbum*, lead] 1. The typical genus of Plumbaginaceæ, *q v.* 2 =Graphite, *q v.*, a modification of carbon.

Plumbic, (plum'bik). [Plumbum, *q.v.*] Related to plumbum or lead; leaden. *P. sulphide*=Galena=PbS.

Plumb-line. [L. *plumbum*, lead.] A small weight, usually of lead, suspended by a string, so that it hangs vertically, used as a standard of vertical position.

Plumbum, (plum'bum). [The Latin word] =Lead: Pb'', or Pbiv: a soft, bluish-white malleable metal

Plume-nutmegs=Atherospermaceæ, *q v.*

Plumule, (plum'ūl). The growing point of a young plant in its earliest stage of growth.

Pluteiform, (plū'te-i-form). [Pluteus, *q v*] Having the form of the pluteus, *q v*

Pluteus, (plū'te-us). [L. *pluteus*, temporary roof]=The larva of the Echinus, which is called "painter's easel"

Plutonic rocks, (plū-ton'ik). [Pluto.] = Granites, porphyries, &c.: transformed fossiliferous rocks now devoid of fossils, which resemble volcanic formations, but are more crystalline, and in which tuffs or breccias are never found, a sub-division of hypogene rocks, *q v*, transmuted and cooled at great depths by great heat; hence called Plutonic.

Pluviometer, (plū-vi-om'e-ter). [L. *pluvia*, rain, Gk. *metron*, measure] An apparatus for the measurement of the quantity of rain

Pneumatic, (nū-mat'ik) [Gk. *pneuma*, air] Related to air or other gases. *P syringe:* a tube in which a piston works air-tight, by the compression of the contained air sufficient heat is generated to ignite a piece of German tinder.

Pneumatics, (nū-mat'iks). [Gk. *pneuma*, air] The science of the properties of elastic fluids, such as air.

Pneumatocyst, (nū-mat'ō-sist). [Gk. *pneuma*, air, *kystis*, bladder] An air-sac found in some Hydrozoa, used generally for any small air-bladder.

Pneumo, (nū'mō). [Gk. *pneuma*, air] A prefix, implying a relation to air or some other elastic fluid

Pneumogastric nerves, (nū-mō-gas'trik). [Pneumo and Gastric, *q v.*] The tenth pair of cerebral nerves, supplying the stomach, lungs, liver, and larynx.

Pneumonia, (nū-mō'ni-a) [Gk. *pneumon*, lung] The phase of disease called inflammation of the lungs

Pneumootoka, (nū-mō-ot'o-ka) [Gk. *pneuma*, breath, *oon*, egg, *tokos*, laying.] Owen's term for a sub-division of Vertebrata, including birds and the greater number of reptiles.

Poa, (po'a) [Gk. *poa*, fodder.] = Meadow-grass: a plant belonging to Graminaceæ

Podargus, (po-dār'gus). [Gk *pous*, foot; *argos*, swift] = Morepork: an Australian bird, a variety of the goat-sucker.

Podophthalmia, (pod-of-thal'mi-a). [Gk. *pous*, foot; *ophthalmos*, eye.]=Decapoda: crabs, lobsters, &c.; crustacean animals, whose eyes are on stalks, and whose bodies are divided into twenty somites; they have a carapace, and breathe by branchiæ

Podophyllaceæ, (pod-o-fil-lā'se-ē). [Gk. *pous*, foot, *phyllon*, leaf.] A family of plants, resembling Ranunculaceæ.

Podosomata, (podō-sō'ma-ta). [Gk. *pous*, foot; *soma*, body.]=Sea-spiders: a marine subdivision of Arachnida.

Podostemaceæ, (pod-os-te-mā'se-ē). [Gk. *pous*, foot; *stema*, stamen.]=Podostemads: float-

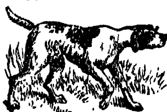
ing moss-like herbs belonging to Rutales; exogens that approximate to endogens.

Poephaga, (pō-ef'a-ga) [Gk. *poa*, grass, *phago*, I eat.] A division of Marsupialia, represented by the kangaroo.

Poikilopleuron, (poi-kil-ō-plō'ron). [Gk. *poikilos*, coloured; *pleura*, side.] An extinct reptile belonging to Dinosauria, *q.v.*

Point. The extreme end of a line, which marks its position without having any space. *Boiling P.:* the temperature at which a given liquid boils *Freezing P.:* the temperature at which a given liquid freezes.

Pointer. A variety of the dog, used in shooting for his power of finding game.


Pointer Dog.

Pointers. Two stars, Merak and Dubhe, in Ursæ Majoris, the line through which points to Polaris.

Poison (poi'zon). [The French word.] Any substance which tends, when mixed with the blood, to destroy life.

Poisonous snakes. Ophiophagus, Naja, Daboia, Trimeresuri, &c.

Polar, (pō'lar). [*Polaris*, the Latin word.] Relating to the N. or S. Pole, or to the poles of a magnet, &c. *P. bear*=Ursus maritimus. a carnivorous variety of the bear. *P. clock:* apparatus attached to a sun-dial, in the northern regions, for the purpose of pointing out the time; the action of it depends on the polarisation of light. *P. distance:* the distance of a star, &c., from the celestial pole, measured along the celestial meridian. *P. lights*, *v.* Aurora Borealis and Aurora Australis.

Polaris, (pō-lā'ris). [L. *stella polaris*, star of the pole.] A star very near the north pole of the heavens, and therefore called the Pole-star, *q.v.*

Polarisation, (pō-lar-i-zā'shun). [Polar, *q.v.*] *P. of light:* a conversion of an ordinary ray, which vibrates in every plane perpendicular to its direction, into one which vibrates in one plane only, and cannot be doubly refracted; in double refraction the ordinary and extraordinary ray are each polarised, but in different planes. *Angle of P.*: for glass, about 55° with the normal; for water, about 52°; for diamond, about 68°.

Polariscope, (pō-lar'i-skōp) [Polar, *q.v.*; Gk. *skopeo*, I see.] An apparatus for detecting polarised light.

Polariser, (pō-lar-ī'zer). [Polarisation, *q.v.*] An apparatus for polarising a ray of light.

Polarity, (pō-lar'i-ti). [Polar, *q.v.*] The property of pointing, or being referred, to opposite poles, as in a magnet, polarised light, &c.

Pole, (pōl). [1. *Pol*, the A.-S. word; 2. L. *polus*, the end of an axis] 1.=Perch: a measure of length=5½ yards. *Square P.*= 30¼ yards. 2. *v.* Poles.

Poles, (pōlz). [*v.* Pole, 2.] 1. Of a magnet: the free ends, which attract more strongly than any other part, one called north, the other south. 2. Of a galvanic battery, one called positive, the other negative; the extremities where the electric action is apparent.

Pole-cat. = Mustela putorius: a weasel-like animal.


Pole-Cat.

Pole - star. The star nearest the N. pole of the heavens; now = α Ursæ Minoris, in 6000 A.D.=γ Draconis.

Polemoniaceæ, (pol-e-mō-ni-ā'se-ē). [Polemonium, *q.v.*] = Phlox-worts: herbs, chiefly American, belonging to Solanales.

Polemonium, (pol-e-mō'ni-um). [*Polemonion*, the Greek name.]=Jacob's ladder=Greek Valerian: a plant, the type of Polymoniaceæ, *q.v.*

Pollards, (pol'lardz). [*Poll*, head.] Trees of which the upper portions have been cut off.

Pollen, (pol'len). [L. *pollen*, fine flour.] A fertilising powder contained in the anthers of flowering plants. *v.* Stamen.

Pollex, (pol'leks). [The Latin word.]=Thumb, *q.v.*

Pollux, (pol'luks). [Classical] 1. A bright star in Gemini, once red, now orange. 2 A mineral, about one-third of which is cæsium.

Poly-, (pol'i). [Gk. *polys*, many.] A prefix implying many.

Polyadelphous, (pol-i-a-del'fus). [Gk. *polys*, many; *adelphos*, brother.] A term applied to plants of which the stamens are united by the filaments. *v.* Stamen.

Polyads, (pol'i-adz). [Gk. *polys*, many.]= Polyatomic elements: triads, tetrads, hexads, &c., *q.v.*

Polyandrous, (pol-i-an'drus). [Gk. *polys*, many; *aner*, man.] *P. plants:* those having the stamens numerous, *i.e.*, more than twenty to each flower.


Polyandrous.

Polyanthus, (pol-i-an'thus). [Gk *polys*, many, *anthos*, flower.] An herb, a variety of the primrose.

Polyatomic, (pol-i-a-tom'ik). [Poly and Atomic, *q v.*] Term used for elements or radicles which have an equivalency greater than one.

Polybasic, (pol-i-bā'sik). [Gk. *Poly* and *Basic*, *q.v.*]=Polyatomic, *q.v.* *P. acids*=Acid salts. *v.* Salts.

Polychroite, (pol-i-krō'īt). [Gk. *polys*, many; *chroia*, colour.] The colouring matter of saffron. *v.* Saffranin.

Polychromatic acid, (pol-i-kro-mat'ik). [Gk. *polys*, many; *chroma*, colour.]=Aloetic acid, *q.v.*

Polychrome, (pol'i-krōm). [Gk. *polys*, many; *chroma*, colour.]=Esculin: a crystalline substance obtained from horse-chestnut bark, named from the variety of colour when seen by reflected light.

Polychromy, (pol'i-krō-mi). [Gr. *polys*, many; *chroma*, colour.] Variety of colour, especially as applied to buildings or statuary.

Polycystina, (pol-i-sis-tī'na). [Gk. *polys*, many; *kystis*, bladder.] Microscopic, siliceous, fora-

minated, bladder-like shells, belonging to Protozoa; also called Radiolaria

Polygala, (pol-ig'a-la). [Gk. *polys*, much *gala*, milk.]=Milk-wort. an herb, the type of Polygalaceæ.

Polygalaceæ, (pol-i-gal-ā'se-ē). [Polygala, *q.v.*] =Milk-worts: herbs and shrubs, sometimes twining, mostly bitter, with milky roots, belonging to Sapindales.

Polygalic acid, (pol-i-gal'ik) [Polygala, *q.v.*] =Saponic acid, *q.v.*; named from being obtained from the plant polygala.

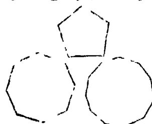
Polygamous, (pol-ig a-mus). [Gk. *polys*, many; *gamos*, marriage.] Having more wives than one.

Polyglycerin; (pol-i-glis'er-in). [Poly and Glycerin, *q.v.*] A condensed variety of glycerin.

Polygastrica, (pol-i-gas'tri-ka). [Gk. *polys*, many, *gaster*, stomach.] = Infusoria: the name given by Ehrenberg.

Polygenetic, (pol-i-gen-et'ik). [Gk. *polys*, many, *genos*, kind.]=Having a variety of kind

Polygon, (pol'i-gon). [Gk. *polys*, many; *gonia*, corner.] A figure bounded by more than four straight lines.


Polygons.

Polygonaceæ, (pol-i-gon-ā'se-ē.) [Polygonum, *q.v.*] = Buckwheats: herbs belonging to Silenales.

Polygonatum, (pol i-gon-ā'tum) [Gk. *polys*, many; *gony*, knee.] A plant belonging to Liliaceæ.

Polygonum, (pol-ig'o-num) [Gk. *polys*, many; *gony*, knee.] Bistort: snake-root, &c. an herb, the type of Polygonaceæ. *P. aviculare* =Knotgrass. *P. persicaria*=Persicaria.

Polyhalite, (pol'i-ha-līt). [Gk. *polys*, many; *hals*, salt] A mineral, chiefly hydrated sulphate of potassium, magnesium, and calcium.

Polyhedron, (pol-i-hē'dron) [Gk. *polys*, many; *hedra*, side.] A solid having many sides.

Polymeric, (pol-im'er-ik). [Gk. *polys*, many; *meros*, part] Related to polymerides, *q.v.*

Polymerides, (pol-i-mer'i-dēz). [Gk. *polys*, many; *meros*, part] Compound bodies having the same proportion among the elements (*i.e.*, the same percentage in the composition) with different properties, *e.g.*, olefiant gas, C_2H_4 and oil gas, C_4H_8.

Polymorphism, (pol-i-mor'fizm). [Gk. *polys*, many; *morphe*, shape.] Variety or diversity of form.

Polynomial, (pol-i-nō'mi-al). [Gk. *polys*, many; Gk. *nomos*, law.] Used of an algebraic quantity having several terms. *cf.* Binomial.

Polype, (pol'ip). [Gk. *polys*, many; *pous*, foot.] = Polyp: an individual of Polypi, *q.v.*

Polypetalæ, (pol-i-pet'a-lē). [Polys and Petal, *q.v.*] Plants, the flowers of which have both calyx and corolla; divided into Thalamifloræ and Calycifloræ.


Polyp.

Polypi, (pol'i-pi). [Gk, *polys*, many; *pous*, foot.] 1. A sub-division of Molluscoida; also used generally for some Cœlenterata. *v.* Polyps. 2. Plural of Polypus, *q.v.*

Polypiaria, (pol-i-pi-ā'ri-a). De Blainville's term for Anthozoa, Bryozoa, &c.

Polypina, (pol-i-pīn'a). Burmeister's term for Bryozoa and Anthozoa.

Polypodiaceæ, (pol-i-pod-i-ā'se ē.) [Polypodium, *q.v.*] = Ferns. plants, fructified by means of spore cases on the back of the leaf or frond, belonging to Filicales.

Polypodium, (pol-i-pō'di-um). [Gk. *polys*, many, *pous*, foot.] = Polypody: a fern, the type of Polypodiaceæ.

Polypogon, (pol-i-pō'gon). [Gk. *polys*, many; *pogon*, awn.]=Beard-grass: a plant belonging to Gramineæ, named from the awns being numerous.

Polyps, (pol'ips). [Gk *polys*, many; *pous*, foot] = Polyp flowers = Animal flowers = Zoophyta, *q v.*; also called Anthozoa.

Polypus, (pol'i-pus). [The Latin word.] A general term for any organism having a number of feet; used specially for fleshy tumours having numerous branches

Polysynthetic crystals, (pol-i-sin-thet'ik). [Gk. *polys*, many; *synthetos*, compound] Those that are compound, *i e.*, made up of a number of smaller crystals.

Polythalamous, (pol-i-thal'a-mus). [Gk. *polys*, many; *thalamos*, chamber.] *P. shell*, having many chambers; *e g.*, Foraminifera

Polyzoa, (pol-i-zo'a) [Gk. *polys*, many; *zoon*, animal] = Sea-mosses; sea-mats = Bryozoa. minute compound animals, belonging to Molluscoida, with ciliated arms, having no higher senses, nor organs of locomotion, but a complete intestine and a nervous system, and are usually fixed to foreign bodies.

Pomaceæ, (pō-mā'se-ē). [L. *pomum*, apple] =Apple-worts: trees and shrubs, belonging to Rosales.

Pomegranate, (pom'gra-nāt). [L *pomum*, apple; *granatus*, many-seeded.] A plant belonging to Punica, *q.v.*


Pomegranate.

Pompilus, (pom'pi-lus). A small black and yellow wasp, the type of the family Pompilidæ.

Pond-weed. *Horned P.* = Zannichellia.

Pone, (pōn). [Gk. *ponos*, labour] Term proposed by Everett for a dynamical unit of weight.

Pons Varolii, (ponz va-rō'li-ī). [The Latin name] Formed by the junction, in front of the medulla oblongata, of two sets of fibres from the cerebellum of the brain.

Pontederaceæ, (pon-te-der-ā'se-e) [S. Pontedera of Padua.] = Pontederads: aquatic herbs, with large flowers, belonging to Liliales.

Poor man's weather-glass=Anagallis arvensis.

Poplar, (pop'lar). [*Populus*, the Latin name] =Populus, *q.v.* *Black P.*=Populus nigra. *Gray P.*=Populus canescens. *White P.*= Populus alba.

Poppy, (pop'pi). [*Papaver*, the Latin name.]=Papaver, *q v.* *Welsh P.* =Meconopsis. *Horned P.*=Glaucium.


Poppy.

Poppy-worts=Papaveraceæ, *q v.*

Populin, (pop'ū-lin). [Populus, *q.v.*]=$C_{20}H_{22}O_8 2H_2O$=A crystalline substance, extracted from the bark and leaves of the aspen

Populus, (pop'ū-lus). [The Latin name]=Poplar, a tree belonging to Salicaceæ. *P. tremula*=Aspen.

Porcelain, (por'se-lān). [*Porcelaine*, the French word.]=China: the finest variety of earthenware, of which kaolin is the chief constituent.

Porcupine, (por'kū-pīn). [L. *porca*, pig, *spina*, spine.]=Hystrix: a nocturnal animal, belonging to Rodentia, having the body covered with spines *Canada P.*=Erethizon.


Porcupine

Pore-worts = Tremandraceæ, *q v.*

Porifera, (por-if'e-ra). [L. *porus*, pore, *fero*, I bear.] *P vitrea*, a siliceous sponge, the type of Hexactinellidæ, *q.v*

Poritidæ, (por-it'i-dē). [Gk. *poritis*, having pores; *eidos*, form]=Porites corals a division of Madreporaria, with porus spongy corallum.

Porphyrio, (por-fī'ri-o) *P. melanotus*: a S. Australian bird, belonging to Rallidæ.

Porphyry, (por'fi-ri) [Gk *porphyra*, purple.] Generally, any rock containing crystals not the same as the rock, also a compact felspar rock: a variety of trappean rock.

Porpoise, (por'pus). [L. *porcus*, pig, *piscis*, fish] = Delphinus a cetacean animal belonging to Delphinidæ.


Porpoise

Port=Larboard: the left-hand side of a vessel looking towards the bows.

Portal circulation, (por'tal). Of blood from the abdominal viscera (stomach, intestines, &c.), through the liver to the hepatic vein.

Portal vein, (por'tal). [L. *porta*, gate] A vein entering the liver, and formed by the junction of veins from the stomach, intestines, pancreas, &c.

Portland, (port'land). [P. in Dorsetshire.] *P. beds*: a sub-division of Upper Oolite, from which is obtained the Portland building stone of Dorsetshire. *P. cement*, a compound of limestone and clay.

Portrait, (por'trat). [The French word.] The painted representation of a person, especially of the features, also used generally for engravings and crayon drawings of this character.

Portugal laurel=Cerasus lusitanica.

Portuguese man-of-war=Physalia, *q.v.*

Portulaceæ, (por-tū-lā'se-ē). [L. *portulaca*, little door]=Purslanes: succulent herbs and shrubs, chiefly American, belonging to Silenales, named from the circular opening of the capsule.

Positive, (poz'i-tiv). [L. *positivum*, placed] In photography, a portrait or view taken with a thin coating of collodion, or other sensitive substance, and finished so as to be itself the picture. *P. crystals:* those in which the index of the extraordinary ray is greater than that of the ordinary ray, *v.* Refraction. *P. electricity*=Vitreous electricity, *v* Electricity. *P. radicles* = Basylous radicles, *v.* Basylous.

Post, (pōst). [L. *post*, after.] *P. axial:* portions of organisms that are external or posterior to the axis. *P. meridian*=Afternoon expressed by P.M. *P pliocene*=Lower P. tertiary; rocks in which the shells are all of living species, and the Mammalia in part extinct *P. tertiary*, *v.* Quaternary.

Postulates, (pos'tu-lāts). [L. *postulo*, I demand] Demands made, or matters to be admitted, as bases of discussion.

Potamides, (pot'a-midz) [Potamis, the typical genus.] Molluscs, with spiral shells, found in sea and in rivers, all herbivorous

Potamogeiton, (pot-a-moj'i-ton) [Gk. *potamos*, river, *geiton*, neighbour] An aquatic herb, belonging to Naiadaceæ

Potash, (pot'ash). [Pot and Ashes.]=K_2O=Dipotassic oxide=Potassa: an alkaline substance obtained from wood ashes, and from potash. *Caustic P* = Potassic hydrate=KHO absorbs water.

Potassiamide, (pot-as'i-a-mīd). [*Potassium* and *Amide.*]=Ammonia in which part of the hydrogen is replaced by potassium.

Potassic, (pō-tas'sik). [Potassium, *q.v*] Relating to potassium; containing potassium as an ingredient. *P. bitartrate* = Cream of tartar. *P hydrate*=Caustic potash=KHO *P. nitrate* = Saltpetre=Nitre=KNO_3. *P sodic-tartrate*=Rochelle salt=$KNaC_4H_4O_6$

Potassium, (pō-tas'si-um). [Potash, *q v*]=Kalium=K_2: one of the alkali metals: a soft bluish-white metal, lighter than water, with an intense affinity for oxygen: found in alum, felspar, &c.; faintly luminous during oxidation in air.

Potato,(po-tā'tō). [*Patata*, the Spanish name.]=Solanum tuberosum: a plant belonging to Solanaceæ. *Sweet P.*=Batatas. *P. starch*, *v.* Starch.

Potential energy, (pō-ten'shi-al). [L. *potens*, that may be.]=Energy of position. *v.* Energy.

Potentilla, (pō-ten-til'la). [L. *potens*, powerful]=Cinquefoil: an herb, belonging to Rosaceæ, named from its effect as a medicine.

Poterium, (po-tē'ri-um). [Gk. *poterion*, cup.] An herb, belonging to Rosaceæ. *P. officinale*=Great burnet.

Potstones. Very large flints, having a chalk nucleus, found in Upper Cretaceous strata.

Pottery, (pot'ter-i). [Pot.]=Earthenware, *q.v.*

Potto, (pot'to). An animal belonging to Cercoleptes. *African P.*=Lemur. *American P.* =Viverra.

Poultry, (pōl'tri). [Poult, young chicken.]

Domesticated birds reared for eating: ducks, fowls, geese, turkey, &c.

Poulpe [The French name; Gk. *polypous*, many footed.]=Octopus, *q.v.*

Pound, (pound). [L *pondus*, weight] 1. A weight. *P avoirdupoise*=16 ounces=7000 grains. *P Troy*=12 ounces=5760 grains. 2. A term of value=20 shillings.

Pouter (pou-ter) A variety of the pigeon, of which the breast is usually prominent.



Pouter Pigeon.

Power, (pow-er). [*Pouvoir*, the French word.] 1. In arithmetic, the continued multiplication of a number by itself, gives the various powers of that number. The second power = Square = The number multiplied by itself; third power=Cube, &c. 2 Capacity for doing work, as steam-power, water power, &c. *Horse P.*, *v.* Horse. *P. loom*: a loom moved by steam, water, &c.

Præcoces (prē-kō'sēz). [L *præcox*, premature] Owen's name for a sub division of birds, including [illegible] and water birds as poultry, ducks, &c.

Præmolar [illegible] -mō'lar) [L *præ*, in front of; *molares*, grinders]=Bicuspid the molar teeth [illegible] are preceded by milk molars.

Præsepe (prē-sē-pē) [The Latin name]= Beehive [illegible] nebulous group of stars, in Cancer [illegible] star clusters.

Prairie [illegible] [The French word] A large [illegible] especially of the vast plains of N America [illegible] Pampas

Prase. [illegible] green variety of quartz

Prasiolite (pra-zi-ō-lit) [Gk *prasios*, green, *lithos*, stone] A mineral, chiefly silicate of alumina [illegible] magnesium, iron, &c.

Pratt's theory: of the crust of the Earth. That the elevations and depressions are caused by unequal contractions in cooling

Prawn, (prawn). A small crustacean animal, resembling the shrimp =[illegible]



Prawn

Precession, (pre-sesh'un.) [L *præcedo*, I go before.] *P. of Equinoxes*: the movement of the equinoctial points along the ecliptic: which occassions an earlier recurrence of the equinoxes, *v* Equinox.

Precipitate, (pre-sip'i-tāt). [L. *præcipito*, I cast down.] Solid matter chemically separated from a liquid in which it has been dissolved. *Red P.*: binoxide of mercury. *White P.*= Chloride of mercury and ammonia. *v.* Fusible.

Prehnite, (pren'it). [Named after the discoverer.] A mineral substance, chiefly silicate of alumina and lime, crystallising in rhombs.

Presbyoptic, (pres-bi-op'tik) [Gk. *presbys*, old; Optic, *q.v.*]=Longsighted. *v.* Presbytism.

Presbytism, (pres'bi-tizm). [Gk. *presbys*, old.] =Longsight: when the focus of the eye is farther off than usual, and only distant objects are distinctly seen.

Pressirostres, (pres-si-ros'trēz). [L. *pressus*, flattened; *rostrum*, beak.] Plovers, bustards, &c.: birds with long wings and compressed beaks, forming a sub-division of Grallatores.

Pressure gauge=Manometer, *q.v.*

Primary, (pri'ma-ri). [L. *primus*, first.] *P. acids:* organic acids in which one equivalent of hydrogen is replaced by one of an alcoholic radicle. *P. alcohols* = Ordinary alcohols= Wood spirit, in which one equivanent of hydrogen has been replaced by one of methyl, ethyl, &c. *P. coil*, *v.* Ruhmkorff's coil. *P. colours:* red, yellow, and blue; *v.* Spectrum. *P. diamides:* in which one-third of the hydrogen is replaced by an organic radicle. *P. monamides:* in which one equivalent of hydrogen is replaced by an organic radicle. *P. rocks*, *v.* Primary rocks.

Primary rocks=Palæozoic: now applied to all rocks older than Secondary, originally given to all crystalline and unfossiliferous formations, upon the hypothesis that they were the oldest.

Primates, (pri'mats). [L. *primus*, first.]= Man, apes, monkeys, and lemurs: a division of Mammalia marked by a discoidal deciduate placenta, a movable thumb, and incisor teeth being never more than four in each jaw.

Prime, (prīm) [L. *primus*, first.] *P. meridian:* that from which longitude is measured, in Great Britain, that of Greenwich *P. numbers:* those that, like 19, 37, &c., are not divisible by any whole number greater than 1. *P. vertical:* a celestial great circle passing through the east and west points and the zenith.

Primitive, (prim'i-tiv) [L. *primus*, first.] *P. light*: any one of the seven primary colours of the spectrum. *P. rocks:* a name given to granite and other crystalline rocks upon the theory that they are the oldest rocks.

Primordial zone. Term used by M. Barrande for rocks in Bohemia, corresponding in part to Cambrian rocks, and in which he believed the first animals to have appeared.

Primrose, (prim'rōs). [L. *primus*, first; Rose, *q v.*]=Primula, *q.v.*

Primula, (prī'mu-la). [L. *primulus*, first.]. An herb: the type of Primulaceæ. *P. elatior*= Oxlip. *P. veris*=Cowslip. *P. vulgaris*= Primrose: named from flowering early.

Primulaceæ, (prī'mu-lā-se-ē). [Primula, *q.v.*] =Prim-worts. herbs, with beautiful fragrant spring flowers, belonging to Cortusales.

Principle, (prin'si-pl). [L. *principium*, beginning] A general term for any fundamental constituent. *Organic P.*: substances of complex chemical character, containing nitrogen, and forming the characteristic constituents of various vegetable and animal tissues.

Printers' ink. Congealed linseed oil and lamp black.

Prism, (prizm). [Gk. *prisma*, splitting.] A solid bounded by two parallel plane surfaces and a number of parallelograms; a transparent body, such as glass or rock salt, having regular surfaces, two of them being



Prisms.

usually parallel; usually means a solid with three rectangular faces and two triangular ends. *Nicol's P.*, v. Nicol's Prism.

Prismatic, (priz-mat'ik). [Prism, *q.v.*] Relating to a prism. *P. colours:* the seven colours of the spectrum, v. Spectrum. *P. system*=Orthorhombic, *q.v.*

Prismatocarpus, (priz-mat-ō-kär'pus). A plant belonging to Campanulaceæ. *P. speculum*= Venus's looking-glass.

Pristis, (pris'tis). [Gk. *pristes*, sawer.]=Saw-fish: having a long serrated snout, belongs to Raiidæ.

Privet, (priv'et) =Ligustrum, *q.v.* *P. moth* =Sphinx ligustri. larvæ feed on privet.

Problem, (prob'lem). [*Problema*, the Latin word.] In geometry, something that has to be done according to prescribed conditions, and when done demonstrated to be so; generally, any task which is implied difficult.

Proboscidea, (prō-bos-sid'e-a) [Proboscis, *q.v.*; Gk. *eidos*, form.] Elephants; animals belonging to Mammalia, known by their tusk-like incisor teeth, and by the nose being prolonged into a trunk.

Proboscis, (prō-bos'sis). [The Latin word.] 1 =Snout; used also for the trunk of an elephant. 2.=Manubrium: in Discophora. *P. monkey*=Nasalis=Simia nasalis.

Procellaridæ, (pros-el-lā'ri-dē). [Procellaria, the typical genus.] Petrels: a family of birds belonging to Natatores.

Procellarum, (pros-el-lā'rum). [L. *procella*, storm.]=Oceanus procellarum. the largest of the plains (formerly called seas) on the surface of the Moon; about 90,000 sq. m. in extent.

Processes, (pro'ses-sez). v. Floccular, Ingrassias, and Mammillary.

Processionary moth=Cnethocampa processionæ: march out in armies.

Prochilus, (pro-ki'lus). [Gk. *procheilos*, thick-lipped. *P labiatus*=Sloth-bear.

Procœlia, (prō-sē'li-a). [Gk. *protos*, first, *koilos*, hollow] A sub-division of Crocodilia, *q v.*; named from the vertebræ being hollow in front.

Procœlous, (prō'sē-lus). [Gk. *pro*, front; *koilos*, hollow.] Vertebræ which are hollow in front.

Proculus, (prok'ū-lus). [Classical.] A mountain-peak in the Moon.

Procyon, (prō'si-on). [Gk. *pro*, before; *kyon*, dog.]=Precursor Dog: a binary star, the chief star of Canis Minor, having a blue colour

Productus, (pro-duk'tus). [L. *productus*, drawn out.] A brachiopod, found fossil in Permian and Carboniferous rocks; named from one valve of the shell being longer than the other.


Productus Horridus.

Product, (pro'dukt). [L. *productus*, produced.] 1. In chemistry, the result of any synthetic operation. 2. In arithmetic, the result of multiplication.

Proglottis, (pro-glot'tis). [Gk. *pro-glottis*, point of tongue.] Zooids propagated from a scolex by gemmation, which in turn produce ova.

Projection, (prō-jek'shun). [L. *projectus*, stretched out.] The delineation of solids on a flat surface; a branch of descriptive geometry. *Globular P.:* used for map drawing, in which the eye is at some distance (about ⅞ of the radius) from the surface of the globe. *Gnomonic P.:* in which the eye is supposed to be at the centre of the solid body. *Isometric P.:* in which the plane of projection is equally inclined to three axes at right angles to each other. *Mercator's P.:* by which maps are drawn with the parallels of latitude and the meridians as straight lines; used for navigation. *Natural Ps.:* stereographic, orthographic, &c., as opposed to Mercator's P., which is artificial. *Orthographic P :* in which the eye is supposed to be at an infinite distance. *Stereographic P.:* in map drawing, when the eye is supposed to be at the surface of the globe, so that small portions of the earth's surface can be drawn without distortion.

Prolification, (prō-lif-i-kā'shun). [L. *proles*, offspring; *facio*, I make.]=Generation: especially used for the growth of secondary buds. *Median P.:* adventitious bud, springing from centre of flower. *Axillary P.:* adventitious bud, springing from centre of axil. *Lateral P.:* adventitious bud, springing from centre of inflorescence.

Promerops, (prō'mē-rops). [Gk. *pro*, before; *merops*, bee-eater.] = Sun-bird: brilliantly coloured birds, with long tails, belonging to Upupidæ.


Promerops.

Prominences of sun. v. Red P.

Prominents.=Tooth-backs, *q.v.*

Pronation, (prō-nā'shun). [L. *pronus*, leaning towards.] Turning towards the earth; used specially of the hand when the palm is turned downwards.

Prongbuck. A variety of the antelope.

Proof plane=Carrier: a small piece of gilt paper, with a non-conducting handle, used to convey electricity from one body to another.

Proof spirit. Alcohol strong enough to ignite gunpowder when burning on it, and having a specific gravity of ·920.

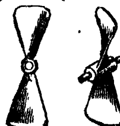
Prootic, (prō-ot'ik). [Gk. *pro*, front; *ous*, ear.] An ossification in the auditory capsule.

Propane, (prō'pān). = Hydride of propyle, C_3H_8: one of the marsh gas series.

Propeller, (prō-pel'er). [L. *propello*, I urge forward.] v. Screw-propeller.

Propionates, (prō'pi-ō-nats). [Propionic, *q.v.*] Compounds of propionic acid and bases.

Propione, (prō'pi-ōn).


Propellers.

[Propionic, *q.v.*] $=(C_2H_5)_2CO=$Valeric aldehyde: the ketone of propianic acid.

Propionic acid, (prō-pi-ŏ'nik). [Gk. *pro*, first; *pion*, fat] $=C_3H_6O_2=$ Ethyl formic acid =Metacetonic acid: from fermentation of glycerin, &c.; the simplest fatty acid; a pungent crystalline substance; also called Methacetic acid.

Propionitrile, (prō-pi-ō-nī'tril). [Propione and Nitrile, *q.v.*] $=C_3H_5N=$Ethyl cyanide=Hydrocyanic ether: a colourless, alliaceous, very poisonous liquid.

Propionyl, (prō'pi-ō-nil) [Propione, *q.v.*; Gk. *hyle*, material.] The radicle of the propionic series.

Propodite, (prō'po-dīt)=Propodium, *q.v.*

Propodium, (prō-pō'di-um). [Gk. *pro*, front; *pous*, foot.] The proximal segment of a Crustacean.

Proportion, (prō-pōr'shun). [*Proportio*, the Latin word.] Equality of ratios, *v.* Ratio. *Harmonic P.*, *v.* Harmonic.

Proposition, (prop-ō-zish'un) [L. *pro*, forth; *pono*, I place] In geometry, a statement put forward as truth, to be proved by reference to admitted truth.

Propus, (prō'pus). A sun-star.

Propyl, (prō'pil). $=(C_3H_7)_2=$Hexyl hydride= Sextane: a liquid hydrocarbon also called Ditrityl. Isopropyl: a modification of P.

Propylene, (prō'pi-lēn). [Propyl, *q.v.*]=Tritylene=Propyl$-C_3H_6$: a gas one of the ethylene series.

Proscolex. *v.* Scolex.

Prosencephalic, (prō-sen-se-fal'ik). [Gk. *pro*, front, Cephalic, *q.v.*]=Frontal: belonging to the front of the cranium or forehead.

Prosenchyma, (pros-eng'ki-ma). [Gk. *pro*, near, *egchymos*, juice] A vegetable tissue, composed of long pointed cells.

Prosimiæ, (prō-sim'i-ē). [Gk. *pro*, near; Simia, *q.v.*] Giebel's term for lemurs.

Protagon, (prō'ta-gon). [Gk. *protos*, first.] $C_{116}H_{240}N_4PO_2$ a solid glucoside body found in the brain, from which the base neurine is obtained.

Protandry, (prō-tan'dri). [Gk. *pro*, before; *aner*, man.] When the stamens of a plant ripen before the pistil. *cf.* Protogyny.

Protaster, (prō-tas'ter). [Gk. *protos*, first; *aster*, star.] Star-fish, belonging to Ophiuroidea; known only by fossil remains found in Silurian rocks.

Proteaceæ, (prō-te-ā'se-ē). [Protea, the typical genus]=Proteads: shrubs and trees, with hard woody leaves, belonging to Daphnales.

Protean, (prō'tē-an). [Proteus, who was able to assume various forms.] = Polymorphic: having more than usual variation.

Proteids, (prō'te-idz). [Gk. *protos*, first; *eidos*, form.] = Nitrogenous proximate principles: gluten, albumen, casein, &c.: compounds of oxygen, hydrogen, nitrogen, and carbon; forming one of the primary divisions of food.

Protein, (prō'te-in). [Gk. *protos*, first] = $C_{18}H_{25}N_4O_5\ H_2O$: the essential principle of food; the only substance by means of which nitrogen can be supplied to the body; exists in many isomeric forms.

Proteles, (prō'tē-lēz). [Gk. *pro*, in front; *teleos*, complete] A fox-like quadruped, belonging to Carnivora, named from having five digits on front feet. *P. lalandii*=Aard-wolf.


Proteles.

Proteosaurus, (prō-te-ō-sau'rus). [Gk. *protos*, first; *sauros*, lizard]=Ichthyosaurus, *q.v.*

Proteus, (pro'tūs). [Classical.] An elongated urodele with permanent gills, and very short legs, found in underground caves, also called Siren and Hypochthon; represents the larval state of the frog.

Prothallium, (prō-thal'li-um). [Pro and Thallium, *q.v.*] The first development of vascular cryptogamic plants.

Protista, (prō-tis'ta). [Gk. *protistos*, very first] The lowest form of life: microscopical individuals, reproduced only by fission or gemmation, considered as connecting animals and plants, by partaking of the nature of each.

Protochlorides, (prō-tō-klō'rīdz). [Gk. *protos*, first, Chloride, *q.v.*]=Monochlorides, *q.v.*

Protococcus, (prō-tō-kok'kus). [Gk. *protos*, first, *kokkos*, berry.] A microscopic plant belonging to Confervaceæ, *q.v.* *P. Nivalis* =Red snow.

Protogyny, (prō-toj'i-ni) [Gk. *protos*, first; *gyne*, woman.] When the pistils of a flower ripen before the stamens. *cf.* Protandry.

Protophyta, (prō-tō-fī'ta). [Gk. *protos*, first; *phyton*, plant] *v.* Endlicher's.

Protoplasm, (prō'tō-plazm) [Gk. *protos*, first; *plasso*, I mould]=Physical basis of animal and vegetable life: the primitive tissue of an embryo. A soft, inelastic, and albuminous substance which forms the intermediate layer of cells, never found fluid.

Protopteri, (prō-top'ter-i). [Protopterus, *q.v.*] =Mudfishes=Dipnoi, *q.v.*

Protopteris, (prō-top'ter-is). [Gk. *protos*, first; *pteris*, fern.] A fern-like plant, known only by fossil remains.

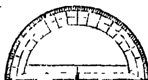
Protopterus, (prō-top'ter-us). [Gk. *protos*, first; *pteron*, fin.]=Lepidosiren, *q.v.*

Protornis, (prō-tor'nis). [Gk *protos*, first; *ornis*, bird] A sparrow-like bird, known only by fossil remains, found in Eocene rocks, the oldest known fossil of this kind.

Protorosaurus, (pro-tō-rō-saw'rus). [Gk. *protos*, first; *sauros*, lizard.] = Protosauros: a lizard-like animal, probably the oldest known, of which fossil remains are found in Permian rocks.

Protozoa, (prō-tō-zō'a). [Gk. *protos*, first; *zoon*, animal.] The smallest and simplest animals known, forming the lowest subkingdom of animals, including sponges, rhizopods, &c.: have no special organs of nutrition; mostly secrete skeletons: also considered by some naturalists to include Infusoria; the only animals found in any number at great sea depths.

Protractor, (prō-trak'tor). [L. *protraho*, I draw forth.] An instrument used in drawing, for the measurement of angles. *P. muscle:* one used to extend the leg, arm, &c.


Protractor.

Protyl, (prō'til). [Gk. *protos*, first; *hyle*, material.] A new name for methyl, *q.v.*

Protylen, (prō'ti-len). [Protyl, *q.v.*] = Hydride of methyl = Marsh gas, *q v.*

Protylic, (prō-til'ic). [Protyl, *q.v.*] A new name for methylic.

Proustite, (pro-ū'stīt) = Light red silver ore a mineral, chiefly sulphide of silver and arsenic, with hexagonal crystallization.

Proximate, (proks'i-māt). [L. *proximatus*, near.] *P. analysis:* the separation of a complex substance into its constituent compounds. *P. principles:* organic compounds which are the constituents of more complex organizations.

Prunus, (prū'nus). [The Latin name] = Plum, cherry, apricot, &c a plant belonging to Drupaceæ. *P. spinosa* = Blackthorn

Prussian. *P blue* an hydrated compound of ferrocyanide and iron = Oxalo-nitrile. *P. gun*, *v.* Gun.

Prussiate of potash. *Red P* = Ferricyanide of potassium. *Green P.* = Magnetic ferricyanide of potassium

Prussic acid, (prus'sik) = HCN = Cyanic hydride = Hydrocyanic acid, *q v.* A colourless, inflammable, volatile, and very poisonous liquid; named from being obtained from Prussian blue.

Psalterium, (sawl-tē'ri-um). [Gk. *psalterion*, psaltery.] The 3rd stomach of Ruminantia, *q v.*

Psamma, (sam'ma). [Gk *psammos*, sand] Marrem-grass: a plant belonging to Graminaceæ. *P. arenaria* = Sea-reed.

Psaronius, (sa-rō'ni-us). [Gk. *psaros*, speckled] A tree fern, fossil trunks of which are found in Lower Permian rocks.

Pseudo, (sū'dō). [Gk. *pseudos*, false.] A prefix implying resemblance sufficiently close to deceive a casual observer. *P. alcohols:* have a lower boiling point than true alcohols *P. crinus:* an encrinite found in Silurian rocks *P. hæmal:* vascular system of Annelida, a system of contractile vessels, but with no heart *P. hearts:* contractile cavities in Brachiopoda: *v.* Heart *P. morphism:* 1. In crystals, when a crystal has the form of one mineral with the composition of another, caused by the loss, gain, or exchange of some of the constituents. 2, *v.* Mimicry. *P. myrma ants:* with large eyes, live in horns of bull's-horn thorn, and hunt singly. *P. neuroptera:* dragon-flies, may-flies, &c. *P. orcin* = Erythrite, *q.v.* *P. podia:* temporary extensions serving for feet, in Rhizopoda, &c. *P. scope:* an optical instrument, which gives a deceptive appearance to an object seen through it. *P. scorpions:* one of Hœven's sub-divisions of Arachnids = Cheliferidæ.

Psidium, (sid'i-um). [Gk. *psidion*, pomegranate.] A plant, belonging to Myrtaceæ, found in tropical America. *P. pomiferum* = Guava

Psilomelane, (sī-lom'e-lān). [Gk. *psilos*, smooth; *melas*, black.] An amorphous variety of pyrolusite, chiefly peroxide of manganese; also called Black Hematite.

Psittacidæ, (sit-tas'i-dē). [Psittacus, *q v.*; Gk. *eidos*, form.] Parrots, &c: a family of monogamous birds, belonging to Scansores found in tropics, have strong curved beaks, are gaily coloured, and vocal organs enabling them to utter articulate sounds

Psittacus, (sit'ta-kus). [The Latin name] Parrot: a bird, the type of Psittacidæ; is able to imitate the human voice

Psoralea, (sō-rāl'e-a). [Gk. *psoraleos*, warted] Bread-root: a plant, belonging to Leguminaceæ, found in N. America.

Psychology, (sī-kol'ō-ji). [Gk. *psyche*, soul, *logos*, discourse.] The science of the human mind, and of mental processes generally. *v.* Science, *v.* Geogeny.

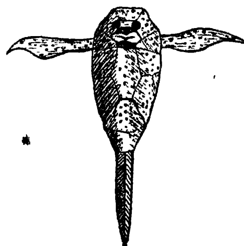
Psychrometer, (sī-krom'e-tēr). [Gk. *psychros*, cold, *metron*, measure] An instrument used in hygrometry: two thermometers, one in air, the other with the bulb in water, the difference of the two is the measurement of the moisture of the air.

Ptarmigan, (tär'mi-gan). [*Tarmachan*, the Gaelic name.] Lagopus mutus: a bird belonging to Tetraonidæ.


Ptarmigan.

Pteraspis, (ter-as'pis). [Gk. *pteron*, wing; *aspis*, shield] A fish, fossil remains of which are found in Middle Devonian and in Lower Ludlow; the oldest fossil fish known. *v.* Ostracostei.

Pterichthys, (ter-ik'thys). [Gk. *pteron*, wing; *ichthus*, fish.] A fish, with wing-like fins and shelly covering, known by remains found in Old Red Sandstone. *v.* Ostracostei.


Pterichthys.

Pteris, (ter'is). [Gk. *pteron*, wing] = Fern = Bracken, *q.v.*; named from the wing-like fronds.

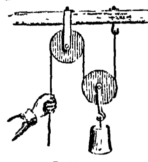
Pterocarpus, (ter-ō-kär'pus). [Gk. *pteron*,

wing; *karpos*, fruit.] A plant belonging to Leguminaceæ. *P marsupium*=Kino tree.
Pterocles, (ter'o-klēz). A bird belonging to Tetraonidæ.
Pterodactyles, (ter-ō-dak'tilz). [Gk. *pteron*, wing; *daktylos*, finger.]=Winged lizard: extinct reptiles, of which one of the digits are prolonged to support a patagium: fossil remains found in Kentish chalk; also called **Ornithocephalus**.
Pterodactylus=Pterodactyles, *q.v.*
Pterophori, (ter-of'o-ri). [Gk. *pteron*, wing; *phoreo*, I bear.] = Plume-moths or feather-bearers: a family belonging to Lepidoptera.
Pteropoda, (ter-op'o-da) [Gk. *pteron*, wing, *pous*, foot.] Small marine carnivorous mollusca which swim by fin-like feet, have shells which are either straight or regularly curved, and are never parasitic; belong to Encephala, *q.v.*, found from Lower Silurian until now.
Pteropus, (ter'o-pus). [Gk. *pteron*, wing; *pous*, foot.] An animal belonging to Cheiroptera. *P. personatus*=Fox-bat.
Pterosauria, (ter-ō-saw'ri-a). [Gk. *pteron*, wing *saura*, lizard.]=Flying lizards: extinct reptiles, with large head and long jaws, found in Mesozoic beds, having a wing-like expansion of skin, as in bats: comprise dimorphodon, rhamphorhynchus, and pterodactylus; also called Ornithosauria, *q.v.*
Pterygoid, (ter'i-goid). [Gk. *pteryx*, wing; *eidos*, form.] A bone in the skull of vertebrates; in man called the pterygoid process of the sphenoid bone.
Pterygotus, (ter-ig'o-tus). [Gk *pteryx*, wing; *ous*, ear.] A lobster-like crustacean, remains of which are found in Old Red Sandstone.
Ptilorhynchus, (til-ō-ring'kus). [Gk. *ptilon*, plume; *rygchos*, beak.] A bird belonging to Corvidæ, found in the tropics. *P. holosericeus*=Bower-bird.
Ptolemaic system, (tol-ē-mā'ik). [Ptolemy.] An obsolete system of astronomy, in which the earth was supposed to be immovable, and the sun and stars to revolve round it.
Ptolemæus, (tol-e-mē'us). [Classical.] A plain in the Moon, which is more than 100 miles in diameter.
Ptyalin, (tī'a-lin). [Gk. *ptyelon*, saliva]= Salivary diastase: the essential constituent of the saliva=Diastase of germinating barley.
Pubis, (pū'bis). *v.* Innominate bone.
Puccinia, (puk-sin'i-a) Mildew: a fungus, found on living plants, belonging to Coniomycetes; *v.* Mildew. *P. graminis* = Corn-mildew=Ergot.
Puddingstone, (pŏŏd'ing-stōn)=Conglomerate, *q.v.*=Pebbly sandstone.
Puddler's-ore. A variety of red hæmatite.
Puddling, (pud'ling). 1. A process by which carbon and silicon are removed from iron ore. 2. A process by which a mixture of clay, sand, &c., is made water-tight, so that it serves for canals, &c.
Puerperal, (pū-er'per-al). [L. *puer*, child; *pario*, I bring forth] Belonging to child-birth.

Puff. *P. adder*=Clotho arietans: a viperine snake. *P. ball*=Lycoperdon, *q.v.* *P. balls*= Gasteromycetes, *q.v.* *P. birds*=Barbets, *q.v.*
Puffing, (puf'fin). [The French name.]= Puffinus = Fratercula arctica: a marine diving-bird, belonging to Laridæ.

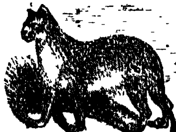

Puffin.

Puffing-Billy. A popular name given to an early form of the locomotive steam engine.
Pugmill. A mill for mixing clay, &c.
Pulex, (pū'leks). [The Latin name]=Flea, *q.v.* *P. irritans* = Common flea. *P. penetrans*=Chigoe, *q.v.*
Pulicaria, (pū-li-kā'ri-a). [L. *pulex*, flea] Flea-bane: a plant belonging to Asteraceæ.
Pulicidæ, (pū-lis'i-dē). [Pulex, *q.v*; Gk. *eidos*, form.] A family of insects, belonging to Aphaniptera, of which the flea is the type.
Pulley, (pŏŏl'li). [A.-S. *pullian*.] A circular lever, of which the centre is the fulcrum, a wheel on the surface of which a rope or chain works in a groove.


Pulley.

Pulmobranchiata, (pul-mō-brang'ki-ā-ta). [Gk. *pulmo*, lung; *bragchion*, gill] = Pulmogasteropoda, *q v.*
Pulmogasteropoda, (pul-mō-gas-ter-op'o-da). [L. *pulmo*, lung; Gk. *gaster*, belly, *pous*, foot]=Snails, slugs: animals, belonging to Gasteropoda, who breath by means of lungs, and move by means of an extensile foot.
Pulmonaria, (pul-mon-ā'ri-a). [L. *pulmo*, lung]=1. Lung-wort: an herb belonging to Boraginaceæ. 2. A sub-division of Arachnida.
Pulmonary, (pul'mon-ā-ri] [L. *pulmo*, lung] *P. artery*: conveying blood from the heart to the lungs. *P. vein*: conveying blood from the lungs to the heart. *P. circulation*= Lesser circulation: between the heart and lungs.
Pulmonata, (pul-mon-ā'ta). [L *pulmo*, lung] Gasteropods able to breathe in air, by means of a pulmonary sac.
Pulmonifera, (pul-mon-if'er-a.) [L. *pulmo*, lung, *fero*, I bear]=Pulmogasteropoda, *q v.*
Pulp, (pulp) [*Pulpa*, the Latin word.] The semi-fluid softer parts of fruit.
Pulse, (puls). [1. L. *pulso*, I beat; 2. *Puls*, the Latin name] 1. The throbbing of the arteries, especially as felt in the wrist. 2. A general term for peas, beans, and other leguminous plants.
Pulverization, (pul-ver-i-zā'shun). [L. *pulvero*, I powder] Reduction of a solid substance to powder.
Pulverulent, (pul-ver'ū-lent). [L. *pulvero*, I powder.]=Friable: easily reduced to powder.
Pulvis fulvinans, (pul-vis fŭl'min-ans). [The Latin words.] An explosive compound, consisting of nitre, sulphur, and potassic carbonate.

Puma, (pū'ma). [The Peruvian name.]=Cougar, *q.v.*; also called American lion.


Puma.

Pumice, (pum'is). [*Pumex*, the Latin name.]=Lava-froth: a porous variety of trachyte, formed by the action of gases on lava; a variety of amorphous felspar, chiefly silicate of aluminum.

Pump. An instrument for raising water. *Air P.*: for rarefying or condensing air. *Force P.*: for forcing water above its natural level. *Suction P.*=*Lift P.*: for raising water by means of a vacuum.

Punfield beds. [P. in Dorsetshire.] A subdivision of the Wealden formation, containing marine shells.

Punica, (pū'ni-ka). Pomegranate: a plant belonging to Myrtaceæ.

Pupa, (pū'pa). [L. *pupa*, doll.] 1.=Nymph=Chrysalis: the condition of an insect, previous to its perfect state; an oblong motionless body, with no external limbs; *v.* Aurelia, *v.* Insect life. 2. A terrestrial univalve, resembling the snail. *P. velusta*=Dendropupa, *q.v.*

Pupil, (pū'pil). [*Pupilla*, the Latin word.] An aperture in the iris of the eye, by which light enters.

Punt, (punt). [L. *pons*, bridge.] A flat-bottomed boat, adapted to shallow water.

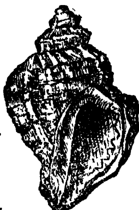
Purbeck strata, (per'bek). [P. in Dorsetshire.] The highest beds of the Oolitic series, the fossils of which are mostly fresh-water, contain numerous remains of Mammalia.

Purgative waters, contain sulphate of magnesia and soda, &c. Found at Ofen, Kissengen, Beulah, Cheltenham, Karlsbad, Leamington, &c.

Purkinje's figures. An image of the blood-vessels and yellow spot of the eye, seen in a dark room by the reflection of a ray of light.

Purple. *P. of Cassius*: used for colouring Bohemian glass=Stannate of gold and tin. *P. clover*=Trifolium pratense. *P. copper*: a variety of Erubescite, *q.v.* *P. emperor*=Apatura iris: a butterfly. *P. lily*=Martagon. *P. pigments*: from gold, tin, &c. *Mineral P.*=Purple of Cassius, *q.v.*

Purpura, (per'pū-ra). [L. *purpura*, used for purple dye.] A molluscous animal belonging to Entomostraca.


Purpura.

Purpuric, (per-pū-rik). [Purpura, *q.v.*] *P. acid*=Murexan: obtained from uric acid: named from the purple colour of its salts.

Purpurin, (per'pū-rin). [Purpura, *q.v.*] $C_{20}H_{12}O_7$: a colouring matter found in madder.

Purreic, (pur're-ik).=Euxanthic acid: a crystalline acid substance found in the yellow pigment purree.

Purse. *P. crabs*=Birgus, *q.v.*

Purslane, (per'slān). [*Portulaca*, the Latin word.]=Portulaca. *Water P.*=Peplis=Arenaria peploides.

Pus, (pus). [The Latin word.] A thick yellow liquid, formed during a diseased condition of some portion of the body.

Putchuk, (put-chuk'). An East Indian plant, the fragrant root of which is used as an incense; belongs to Asteraceæ.

Putrefaction, (pū-trē-fak'shun). [*Putrefacio*, I make rotten.] The resolution of organic substances into inorganic, of which the production of carbonic acid and water is always a part; a successive series of fermentations.

Putty, (put'ti). [Fr. *potée*.] A cement, consisting of whiting and linseed oil, used for joining glass and wood, &c. *P. powder*: binoxide of tin, used for polishing.

Puzzuolana, (put-zō-la'na). [Puzzuoli, a place near Naples.] A volcanic sand, chiefly silicates, which, when mixed with lime, gives it the power of hardening under water; also called Pozzuolana.

Pycnogonida, (pik-no-gon'i-da). [Gk. *pyknos*, thick, *gone*, knee.]=Pycnogonata: microscopic marine animals, having long legs with thick joints, belonging to Arachnida.

Pygæra, (pi-jē'ra). *P. bucephala*=Buff-tip moth, which mimics dried sticks; *v.* Mimicry.

Pygathrix, (pī'ga-thriks). [Gk. *pyge*, posteriors; *thrix*, hair.] Cochin-China monkey=Simia nemæus.

Pyloridia, (pil-ō-rid'i-a). [Gk. *pylorus*, gate-keeper; *eidos*, form.] Razor-fish, &c.: a family of mollusca, belonging to Lamellibranchiata.

Pylorus, (pil-ō'rus). [Gk. *pyle*, gate; *ouros*, guardian.] The opening from the stomach into the intestines, by which the digested food passes.

Pyrallolite, (pir-al'ō-līt). [Gk. *pyr*, fire; *allos*, another; *lithos*, stone.] A mineral, chiefly silicate of magnesium; named from changing colour when heated.

Pyramid, (pir'a-mid). [*Pyramis*, the Greek word.] A solid, terminating above in a point, all its sides being triangles, and its base a polygon.


Pyramid.

Pyrargyrite, (pir-ar'ji-rīt). [Gk. *pyr*, fire; *argyros*, silver.]=Dark red silver ore: an ore of silver, chiefly sulphide of silver and antimony, with hexagonal crystallization.

Pyrene, (pī'rēn). [Gk. *pyr*, fire.]=$C_{15}H_{12}$=Phenylene-naphthalene: a hydrocarbon obtained from coal tar.

Pyrethrum, (pi-rē'thrum). [Gk. *pyr*, fire.] A plant belonging to Asteraceæ, named from the hot taste of the root. *P. parthenium*=Fever few.

Pyrheliometer, (pir-hē-li-om'e-ter). [Gk. *pyr*,

fire; Heliometer, *q v.*] An apparatus for measuring the quantity of the sun's heat received upon the surface of the earth.

Pyridine, (pir'i-din). [Gk. *pyr*, fire.]=C_5H_5N. a colourless pungent oil, the type of the pyridine bases.

Pyridine series of organic bases=$C_nH_{2n-5}N$: a variety of nitrile bases, corresponding to ammonia, in which the ammonia has been displaced by a triad hydrocarbon; includes pyridine, picoline, &c.: obtained from coal tar.

Pyriform, (pir'i-form). [L. *pyrus*, pear; *forma*, shape.]=Tapering: pear-shaped.

Pyrites, (pi-ri'tez). [L *pyrites*, flint] A mineral of the iron group, chiefly di-sulphide of iron, FeS_2, crystallising in cubes: used for its sulphur. *Arsenical P.*=Mispickel *Copper P.* = Sulphuret of copper and iron. *White P.*=Marcasite.

Pyro, (pi'rō). [Gk. *pyr*, fire.] A prefix implying some relation to fire.

Pyrocatechin=$C_6H_6O_2$=Oxyphenic acid, *q.v.*: obtained from catechin.

Pyrochlore, (pi'ō-klōr). [Gk. *pyr*, fire]= Fluochlore: a mineral, chiefly titanate of calcium

Pyrochroa, (pir-ō-krō a). [Gk. *pyr*, fire: *chroa*, colour.] Cardinal beetle: an insect belonging to Coleoptera.

Pyro-citric, (pir-ō sit'rik). [Pyro and Citric, *q.v.*] *P acid* obtained by heating citric acid.

Pyro-electricity. Electricity excited by heat, as when tourmaline becomes electric by being warmed between 10° and 150° C.

Pyro-gallin, (pi-ō-gal'lin). [Pyro and Gallic, *q v.*]=Pyrogallic acid=$C_6H_6O_3$· a crystalline substance obtained from gallic acid by the action of heat.

Pyroheliometer, (pir-ō-hē-li-om'e-tęr). [Pyro and Heliometer, *q v.*]=Pyrheliometer, *q v*

Pyrola, (pī'ro-la). [L. *pyrus*, pear.]=Wintergreen: an herb, the type of Pyrolaceæ, named from the leaves resembling that of the pear tree

Pyrolaceæ, (pi-ro-lā'se-ē). [Pyrola, *q.v.*] =. Winter-greens: herbs belonging to Ericales.

Pyroligneous acid, (pir-ō-lig'ne-us) [Gk. *pyr*, fire; *lignum*, wood] Impure acetic acid.

Pyrolusite, (pir-ō-lō'sīt). [Gk *pyr*, fire, *lysis*, decomposition]=MnO_2: native black oxide of manganese. a friable metallic mineral, much used in chemical processes; belongs to the manganese group.

Pyrometer, (pir-om'e-tęr). [Gk. *pyr*, fire; *metron*, measure] An instrument for measuring the temperature of furnaces, &c. *Daniell's P.*, *v.* Daniell's. *Houldsworth's P.*, a modification of Daniell's. *Wedgewood's P.*, by contraction of baked clay.

Pyromorphite, (pir-ō-mor'fīt) = Chlorophosphate of lead, one of the ores of lead.

Pyrope, (pir'ōp). [Gk. *pyropos*, fire-faced.] Fire-garnet: a variety of garnet.

Pyrophorus, (pir-of'ō-rus). [Gk *pyr*, fire; *phoreo*, I bear.] Any substance which burns spontaneously in air.

Pyrophyllite, (pir-o-fil'īt). [Gk. *pyr*, fire; *phyllon*, leaf.] A variety of talc, chiefly silicate of aluminium.

Pyrorthite, (pir'or-thīt). [Gk. *pyr*, fire.] A mineral, chiefly hydrated silicate of cerium.

Pyrosoma, (pir-os-ō'ma). [Gk. *pyr*, fire; *soma*, body.] A phosphorescent aggregation of botrylli, found in some compound ascidians.

Pyrostilpnite, (pir-ō-stilp'nīt) = Feuerblende =Fire-blende. a mineral.

Pyrotechny, (pir-ō-tek'ni). [Gk. *pyr*, fire; *techne*, art.] Generally, the application of fire to the arts, specially, the art of making fireworks

Pyroxanthin, (pir-ōks-an'thin). [Gk. *pyr*, fire, *xanthos*, yellow.]=$C_{21}H_{18}O_4$. a yellow crystalline substance obtained from wood-spirit

Pyroxene, (pir'ok-sēn). [Gk *pyr*, fire: *xenos*, stranger]=Augite: a mineral, chiefly silicate of calcium, magnesium, and iron.

Pyroxylic. *P. spirit*=Methyl hydrate=Wood spirit.

Pyroxylin, (pir-oks'i-lin). [Gk *pyr*, fire; *xylon*, wood]=Gun-cotton: cotton that has been immersed in nitric acid and so oxidised: has properties of combustion and explosion resembling those of gunpowder.

Pyrrhœoris=Scarlet bug

Pyrrhosa. *P. tingens*, gives mace.

Pyrrhula, (pīr'u-la)=Bullfinch, *q.v.*

Pyrrol, (pīr'rol)=C_4H_5N: an oily substance obtained from Dippel's oil.

Pyrus, (pī'rus). [The Latin name.] Pear, apple, &c.: a plant belonging to Pomaceæ. *P. aucuparia*=Roan tree. *P. aria*=Beam tree. *P. communis*=Pear. *P. malus*=Apple.

Pythagorean, (pith-a-gō-rē'an). *P. bean*= Nelumbium speciosum.

Python, (pī'thon). [The Latin name]= Coluber javanicus; *v.* Pythons.

Pythons, (pī'thonz) Large snakes, belonging to Colubridæ, found in New World.

Pythonidæ, (pi-thon'i-dē) [Python, *q.v.*, Gk. *eidos*, form.] Large snakes, of which the python is the type.

Pyx, (piks) [*Pyxis*, the Latin word] A general term for a box containing any valuable, especially for the box containing sample coins of a new coinage.

Pyxidium, (piks-id'i-um). [L. *pyxis*, box.] A dry dehiscent fruit with a kind of lid.

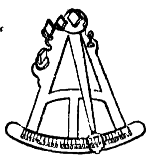
Q.

Quadrangle, (kwod-rang'gl). [*Quadrangulus*, the Latin word.] A plane surface enclosed by four straight lines: specially used as= rectangle; also for a four cornered court, surrounded by buildings.

Quadrans Muralis, (kwod'ranz mū-rā'lis) [The Latin name]=The Mural Quadrant, a northern constellation of small stars only

Quadrant, (kwod'rant). [L. *quadrans*, fourth part.] 1. The quarter of a circle. 2. *v.* Sex-

tant. *Q. electrometer*=Henley's electrometer: a pith ball suspended beside a metal rod, its divergence from which, when electrified, marks, roughly, the tension of the electricity.


Hadley's Quadrant.

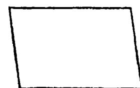
Quadrate bone, (kwod'-rāt). [L. *quadratus*, squared.]±Os quadratum, *v.* Quadratum, Os.

Quadratic equation, (kwod-rat'ik). [L. *quadratus*, squared.] One in which the highest of the terms are raised to the square or second power. *Pure quadratic equation:* one in which the square only of the unknown quantity occurs. *Affected quadratic equation:* one in which the square and first power both occur.

Quadratum, Os. A square bone by which the mandible is joined to the skull in birds and reptiles; in Mammalia its homologue is the malleus.

Quadrature, (kwod'ra-tūr). [L. *quadratus*, squared.]=Squaring. *Q of circle:* the finding a square equal in area to a given circle. *v.* Squaring the circle.

Quadrilateral, (kwod-ri-lat'ẹr-al). [L. *quatuor*, four; *latus*, side.] A general term for any four-sided figure.


Quadrilateral.

Quadrivalent = Tetratomic, *q v.*

Quadrumana, (kwod rō'-ma-na). [L. *quatuor*, four; *manus*, hand] Monkeys, apes, baboons, &c.: a sub-division of Mammalia; sometimes used as equivalent to Old World monkeys.

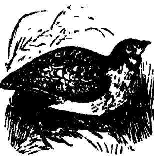
Quadrumanous, (kwod-rō'ma-nus). [Quadrumana, *q.v.*)=Four-handed.

Quadrupeds, (kwod'rō-pedz). A general term for four-footed animals; of which the males are usually larger and fiercer than the females, especially seals and Scotch deerhounds; fossil remains found from palæolithic times until now.

Quagmire, (kwag'mīr). [Quake and Mire.] A soft wet piece of land.

Quagga, (kwag'ga)=Asinus quagga: the wild ass of Cape of Good Hope; named from its cry.

Quail, (kwāl). [*Caille*, the French name.] =Coturnix: a bird belonging to Tetraonidæ. *Tufted Q.*=Lophortyx.


Quail.

Quails=Perdicidæ, *q.v.*

Quaking grass = Briza, *q.v.*

Qualitative, (kwal'i-ta-tiv). [L. *qualitas*, quality.] *Q. analysis.* determination of the nature of the constituents of a compound. *cf.* Quantitative.

Quality. *Q. of heat*, term used to express its penetration of various diathermic substances. *Q. of sound*=Timbre, *q.v.*

Quantitative, (kwon'ti-ta-tiv). [L. *quantitas*, extent] *Q. analysis:* determination of the relative quantities in which the constituents of a compound are present in it. *cf.* Qualitative.

Quantities. *Scalar Q.* can be defined by a single numerical specification. *Vector Q.* require three numerical specifications.

Quantity. *Q. of Voltaic electricity*=Current strength=Amount of chemical action.

Quaquaversal, (kwā-kwa-vẹr'sal). [L. *quaqua*, on every side; *versus*, turned.] *Q. dip:* used of strata inclining in every direction.

Quarry, (kwor'ri). [*Carrière*, the French word.] A place where stones are quarried, *i e.*, excavated and roughly squared.

Quartan, (kwor'tan). [*Quartanus*, the Latin word] Fourth.

Quartane, (kwor'tān). [L. *quartus*, fourth.] =Ethyl, *q v.*; also *v.* Hydrocarbons.

Quartation, (kwor-tā'shun). [L. *quartus*, fourth] Separation of silver and gold, by the solution of the former in nitric acid; named from the gold never being more than ¼ of the whole.

Quartene, (kwor'tēn). *v.* Hydrocarbons.

Quarter, (kwor'tẹr). [L. *quartus*, fourth.]= 28 lbs; *v.* Avoirdupois weight.

Quarters of the Moon. 1st quarter, half illuminated. 2nd quarter, full Moon, the side turned to us being fully lighted. 3rd quarter, half illuminated. 4th quarter, new Moon, almost wholly obscured.

Quartine, (kwor'tīn). [L. *quartus*, fourth.] =Crotonylene: C_4H_6, *q.v.*; also *v.* Hydrocarbons.

Quartone, (kwor'tōn). [L. *quartus*, fourth.] *v* Hydrocarbons.

Quartune, (kwor'tūn). [L. *quartus*, fourth.] *v.* Hydrocarbons.

Quartz, (kwortz') [*Quarz*, the German word.] =Spar: native silica, a mineral crystallising in hexagons; infusible, and insoluble, except in hydrofluoric acid, when pure, colourless Amethyst, cairngorm, cornelian, agate, onxy, &c., are varieties of quratz.

Quartzite, (kwort'sīt). [Quartz, *q v*]=Quartz-rock: a compact granular metamorphic rock, containing crystals of quartz.

Quassia, (kwos'si-a). [Quasu, who first used it] A plant belonging to Simarubaceæ, found in tropical America. *Q. amara*=Bitterwood.

Quassiads, (kwos'si-adz). [Quassia, *q.v.*]= Simarubaceæ.

Quassin, (kwos'sin). [Quassia, *q v.*]=Quassite: $C_{10}H_{12}O_3$: the bitter principle of quassia.

Quata. *v.* Ateles.

Quaternary, (kwa-tẹr'na-ri). [L. *quaternarius*, containing four.] = Post Tertiary, and all subsequently deposited rocks.

Quaternions, (kwa-tẹr'ni-onz). [L. *quaternarius*, containing four.] A branch of mathematics, applicable to three dimensions, by means of the product or quotient of two lines or vectors, depending on a system of four geometrical elements, and expressible by quadrinomial symbols; also called Hamilton's triangle.

Quatre-foil, (kä'tr-foil). [Fr. *quatre*, four; *feuille*, leaf.]=Quarter-foil: an architectural ornament somewhat resembling four leaves.



Quartrefoils.

Quatsimas. An American race.

Quedius. *Q. fulgidus*=Hornet-beetle.

Queen's metal. An alloy of antimony, tin, bismuth, and lead, the greater part being tin.

Queen-posts. Upright beams in a compound girder or trussed roof. *cf* King-post.

Queen post Roof

AA, queen-posts, B, tie-beam; CC, struts or braces, DD, purlins, E, straining beam; FF, common rafters; GG, wall-plates; H, ridge-piece

Queen of the meadows. = Spiræa ulmaria, *q.v.*

Quercetates. (kwer'-se-täts). [Quercus, *q.v.*] Compounds of quercitric acid and bases.

Quercitannic acid, (kwer-si-tan'nik). [Quercus and Tannic, *q v*] = Tannic acid of oak. *v.* Tannic acid.

Quercite, (kwer'sit) [Quercus, *q.v.*]=$C_6H_{12}O_5$: also called Quercin and Sugar of acorns: a variety of sugar obtained from acorns.

Quercitrin, (kwer'si-trin). [Quercus and Citron, *q.v.*] = $C_{33}H_{30}O_{17}H_2O$: a yellow colouring matter obtained from the bark of the Quercus tinctoria; also called Quercitric Acid.

Quercitron, (kwer'si-tron). [Quercus and Citron, *q.v.*] The yellow bark of Quercus tinctoria: a yellow dye-stuff.

Quercus, (kwer'kus). [The Latin name.] Oak: a tree belonging to Corylaceæ, the timber of which is valuable for its durability. *Q ilex* = Evergreen oak. *Q. pedunculata* = Common oak. *Q. suber*=Cork oak.

Quernales, (kwer-nä'lez). [Quercus, *q.v*] Oak, beech, walnut, &c.: trees with monochlamydeous male flowers, and amygdaloid embryos, forming a division of Diclinous Exogens

Quesal=Trogon resplendens: the royal bird of the Aztecs.

Quichuas. An American race.

Quick grass=Triticum repens

Quick lime=Pure lime, *v.* Lime.

Quicksilver = Mercury, *q.v.*, named from its mobility and silvery appearance. *Horn Q* = Horn-mercury=Calomel. *Q. horizon*=Artificial horizon, *q.v.*

Quill, (kwill). [L. *caulis*, stem.] *v.* Feather.

Quill-wort=Isoetes, *q.v.*

Quina=Cinchona, *q.v.*

Quinates, (kwin'äts). [Quinic, *q v.*]=Kinates: compounds of quinic acid and bases

Quince, (kwins). [*Cognassier*, the French name.]=Cydonia vulgaris: a plant belonging to Pomaceæ.

Quindecagon, (kwin-dek'a-gon). [L. *quinque*, five; Gk. *deka*, ten; *gonia*, angle.] A figure having fifteen sides.

Quinia, (kwin'i-a). [Quinine, *q v.*]=$C_{20}H_{24}N_2O_2.3H_2O$: an alkaloid crystalline nitrile base, found in cinchona bark

Quinic acid, (kwin'ik). [Quinine, *q.v.*]= Kinic acid = $C_7H_{12}O_6$: obtained from cinchona bark.

Quinicine, (kwin'i-sin). [Quinine, *q v.*] = $C_{20}H_{24}N_2O_2$: an alkaloid obtained from quinine.

Quinidine, (kwin'i-din). [Quinine, *q v.*] = $C_{20}H_{24}N_2O_2.2H_2O$: a base, probably quinine hydrate

Quinine, (kwin'in). [The French word]= $C_{20}H_{24}N_2O_2$: a bitter alkaloid substance, used medicinally for its antifebrile qualities, obtained from cinchona bark. *Hydro Q.*= Hydrated quinine.

Quinoidine, (kwin'oi-din) [Quinine, *q.v.*, Gk. *eidos*, form] A compound of several bases obtained from quinia

Quinoline, (kwin'o-lin). [Quinine, *q v*] = C_9H_7N=Leukol: an alkaline oily inflammable liquid, the type of the quinoline bases. *Q series of organic bases*=$C_nH_{2n-11}N$: include cryptidine, lepidine, and quinoline; a variety of nitrile bases.

Quinone, (kwin'ōn). [Quinic, *q.v.*]=$C_6H_4O_2$ =Kinone: a yellow crystalline substance obtained by oxidising quinic acid.

Quinonic, (kwin-ō'nik) [Quinone, *q.v.*] Related to, or containing, quinone.

Quinotannic acid, (kwin-ō-tan'nik). [Quinine and Tannic, *q.v*] A variety of tannic acid obtained from cinchona bark.

Quinoyl, (kwin'oil). [Quinone, *q.v.*; Gk. *hyle*, material.] The radicle of the quinone series.

Quinsy, (kwin'zi). [*Esquinancie*, the French word] A diseased condition of the tonsils of the throat.

Quintal, (kwin'tal). [The French word.]=100 kilograms=2 cwt. nearly.

Quintane, (kwin'tān). [L. *quintus*, fifth]= Amyl hydride, *v.* Hydrocarbons.

Quintanes, (kwin'tānz). [Quintane, *q.v.*] C_5H_{12}=Pentanes. *v* Hydrocarbons.

Quintene, (kwin'tēn). [L. *quintus*, fifth.] *v.* Hydrocarbons.

Quintine, (kwin'tīn) [L *quintus*, fifth]= Valerylene: C_5H_8; *v.* Hydrocarbons.

Quintone, (kwin'tōn). [L. *quintus*, fifth.]= Valylene: C_5H_6. *v.* Hydrocarbons.

Quintune, (kwin'tūn). [L. *quintus*, fifth.] *v.* Hydrocarbons.

Quiscalinæ, (kwis-kal'i-nē). [Quiscalus, the typical genus.]=Grakles: a family of starling-like birds, belonging to Sturnidæ.

Quoins, (kwoinz). [F. *coin*, corner.]=Corner-stones.

Quotient, (kwō'shent). [L. *quoties*, how many times] The result of dividing one number by another; *e.g.*, if 12 be divided by 3, the quotient is 4.

R.

Rabbit, (rab'bit). [*Robbe*, the Dutch name.] A small burrowing animal, resembling the hare, belonging to Rodentia. *R. fish*=Chimæra monstrosa.

Raccoon. *v.* Racoon.

Race-horse. A bird. *v.* Micropterus.

Racemates, (ras'e-māts) [Racemic, *q v.*] Compounds of racemic acid and bases.

Raceme, (ra-sēm') [L *racemus*, grape-cluster.] *R. inflorescence:* in which the flowers are arranged on a common axis, as in the currant; the corymb and panicle are varieties of the raceme.

Racemic acid, (ra-sem'ik). [L *racemus*, grape-stalk] = $C_4H_6O_6$ = Paratartaric acid = A modification of tartaric acid, found in grapes.

Racemifera, (ras-e-mif'e-ra). [Raceme, *q.v.*; L. *fero*, I bear] Ehrenberg's term for star-fishes, jelly-fishes, &c.

Racemose, (ras'e-mōz) [Raceme, *q v.*] Having the flowers in racemes. *R. glands:* resembling a bunch of grapes.

Rack, (rak). [A.-S. *recan*, to extend] In machinery, a flat bar having teeth along it, so as to move, or be moved by, a toothed wheel.

Racoon, (ra-koon') [F. *raton*, small rat.] A badger-like animal, belonging to Carnivora, found in N. America.

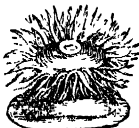


Raccoon.

Radial, (rā'di-al). [Radius, *q.v.*] 1. Related to the radius or fore-arm. 2. Related to the radius of a circle.

Radiaria, (rā-di-ā'-ri-a) [Radius, *q.v.*] Milne-Edwards's term for Radiata.

Radiata, (rā-di-ā'ta). [Radius, *q.v.*] Originally used by Cuvier for a sub-kingdom, now broken up; now used generally for any animals having a radiate form. Polyzoa, Cœlenterata, Annuloida, and Protozoa, have successively been removed from Radiata, and formed into other divisions. Used by Milne-Edwards as=Zoophytes.



Radiate.

Radiated, (ra-di-ā'ted). [Radius, *q.v.*] Issuing in rays. *R. animals*=Radiata, *q.v.*

Radical=Radicle, *q.v.*

Radicle, (rad'i-kl). [L. *radix*, root.] 1.= Young root of a plant. 2. In chemistry, a group of atoms capable of combining with other atoms by substitution. *Organic R* = Compound R., *q.v.* 3. Used generally for root, or commencement, of any organic process. *Compound R.*=A group of elements which enters into various combinations without being readily decomposed by the chemical changes; *e.g.*, ethyl, methyl, amyl, &c. *Oxides of compound Rs.*=Ethers: hydrated oxides=Alcohols.

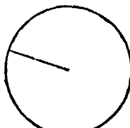
Radiola, (rā-di'o-la). [L. *radius*, ray.] All-seed: a small herb belonging to Linaceæ.

Radiolaria, (rā-di-ō-lā'ri-a), [L. *radiolus*, little radius.] Sea-egg, &c.: animals (mostly marine) belonging to Protozoa, consisting of minute masses of sarcode, throwing out pseudopodia, and having sometimes a siliceous skeleton.

Radiometer, (rā-di-om'e-ter). [L *radius*, ray; Gk. *metron*, measure.] Light-mill: an apparatus, working in a vacuum, intended to show the energy of the sun's rays; also called Crookes's apparatus.

Radish, (rad'ish). [L. *radix*, root]=Raphanus: a plant belonging to Brassicaceæ. *Horse R* =Hyperanthera

Radius, (rā'di-us). [L *radius*, spoke.] 1. The inner bone of the fore-arm, which carries the hand. 2. Any straight line drawn from the centre of a circle to the circumference. *R vector:* an imaginary line drawn from the sun to a planet.



Radius.

Radix, (rā'dix). [The Latin word.] Root. *R. sumbul*=Musk-root, *q.v.*

Rafflesia, (raf-flē'si-a). [Sir T. S. Raffles.] A plant, the type of Rafflesiaceæ, *q v.*

Rafflesiaceæ, (raf-flē-si-ā'se-ē). [Rafflesia, *q.v.*] =Patna-worts: stemless plants, parasitic on trees, belonging to Rhizogens.

Rag. *R. stone:* a siliceous stone, used for sharpening. *R worm* = Mudworm=Limicolæ, *q.v.* *R. wort*=Senecio Jacobæa.

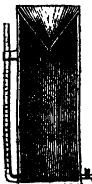
Ragged Robin=Lychnis flos-cuculi, *q.v.*

Raia, (rā'i-a). [The Latin name.]=Ray: a fish, belonging to Raiidæ, *q.v.* *R. beatis*= Blue-skate. *Electric R.*=Torpedo, *q.v.*

Raiidæ, (rā'i-dē). [Raia, *q.v.*; Gk. *eidos*, like.] A family of fishes belonging to Plagiostomi: includes the ray, skate, saw-fish, torpedo, &c.

Rail, (rāl). [Rallus, *q.v.*]=Rallus: a bird, the type of Rallidæ, *q.v.*, has short beak and wings, and long legs and feet. *Land R.*= Corn-crake=Crax pratensis.

Rain, (rān). [*Rêne*, the A.-S. word.] *R. cloud* =Nimbus. *Fossil R.:* small indentations, especially in some New Red Sandstone rocks; supposed to be rain-marks. *R. gauge* = Ombrometer: an instrument adapted to the measurement of the quantity of rain.



Rain-guage.

Rainbow. An arch, containing the colours of the spectrum, caused by the refraction of the sun's light in drops of rain; sometimes called Iris.

Raisin, (rā'zin). [*Raisin*, the French word.] =Dried fruit of the vine.

Rallidæ, (ral'li-dē). [Rallus, *q.v.*, Gk. *eidos*, like.] Coots, rails, &c : a family of birds, belonging to Grallatores.

Rallus, (ral'lus). [The Latin name.] A bird, the type of Rallidæ, *q.v.*

Ram, (ram) [The A.-S. name.] 1.=Aries, *q.v.* 2. The male of sheep, &c. *Hydraulic R.*, the piston of an hydraulic press.

Rammelsbergite, (ram-melz-ber'git) = Chloanthite, *q v.*: a mineral, chiefly arsenide of nickel.

Ramphastidæ, (ram-fas'ti-dē). [Ramphastos, *q.v.*; Gk. *eidos*, like.] Toucans: a family of scansorial birds.

Ramphastos, (ram-fas'tōs) [Gk. *ramphos*, bird's beak.]=Toucan a scansorial bird, having a very large beak.

Ramphorhynchus, (ram-fo-ring'kus). [Gk. *ramphos*, bird's beak; *rhygchos*, snout.] An extinct flying reptile, known by fossil remains found in Middle Oolite and lithographic slate rocks, belongs to Pterosauria.

Rampion, (ram'pion). [L *rapum*, rape.]= Phyteuma, *q v.*; also = Campanula rapunculus

Ramus, (rā'mus) [L. *ramus*, branch.]=Half of the mandible, in animals belonging to Mammalia. In Mammalia, articulated with the temporal bone; in birds and reptiles, articulated with the skull by means of the os quadratum.

Rana, (ra'na). [The Latin name] A small animal belonging to Amphibia, unknown in Australia and S. America. *R. bufo*=Frog. *R bombina* = Bombinator. *R. mugiens*= Bull-frog

Ranales, (ra-nā'lez). [L. *rana*, frog.] Plants with monodichlamydeous flowers, forming a division of Hypogynous Exogens.

Rancidity, (ran-sid'i-ti) [L. *rancidus*, rank] Mustiness: not observed in pure oils or fats.

Raniceps, (ran'i-seps). [L. *rana*, frog. *caput*, head.] Tadpole-fish: a fish belonging to Gadidæ.

Ranunculaceæ, (ra-nun'kū-la-ce-ē). Ranunculus, *q v.*]=Crowfoots: herbs, acrid and often poisonous, belonging to Ranales.

Ranunculus, (ra-nun'kū-lus). [L. *rana*, frog] =Butter-cup, crowfoot, &c.: an herb, the type of Ranunculaceæ. *R acris*=Crowfoot. *R. ficaria*=Pile-wort. *R. lingua*=Serpent's tongue.

Rapa, (rā'pa). [The Latin name.]=Turnip: a plant belonging to Brassicaceæ.

Rapaces, (ra-pā'sēs). [L. *rapax*, plundering.] An order of birds made by Milne Edwards= Raptores, *q.v.*

Rape, (rāp). [*Rapum*, the Latin name.]= Brassica napus: a plant, resembling the cabbage. *R. oil:* from the seeds.

Rapes, (rāps). *Broom R.* = Orobanchaceæ, *q.v.* *Fir R.*=Monotropaceæ, *q.v.*

Raphanus, (raf'a-nus). [Gk. *rha*, quickly; *phaino*, I appear.] = Radish: an herb, with edible root, belonging to Brassicaceæ, named from its rapid growth.

Raphides, (raf'i-dēz). [Gk. *rhaphis*, needle.] Crystals found in the cells of some of the higher plants

Raphiolepia, (raf-i-ō-lē'pi a) = Indian hawthorn.

Raptores, (rap-tō'rēz). [L. *raptor*, robber]= Birds of prey: eagles, kites, vultures, &c.; a primary division of birds.

Raptoria, (rap-tō'ri-a). [L. *raptor*, robber.] =Snatchers: insects belonging to Orthoptera, including the mantis; not known in England.

Ra-ra, (ra'ra)=Phytotoma, *q.v.*

Ras alagne. [Arab.=Head of the Serpent] The chief star of the constellation Serpent bearer.

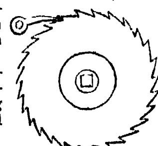
Rasores, (ra-zō'rēz) [L *rado*, I scrape.] =Fowls, pigeons, &c : birds, feeding on seeds, making nests on the ground, and with but feeble powers of flying. *v.* Gallinaceous.

Raspberry, (rasp'ber-ri). [Rasp and Berry]= Rubusidæus: a plant belonging to Rosaceæ.

Rastegna. A French edible dish, of which the opelet is the chief constituent.

Rat, (rat). [*Ræt*, the A.-S. name.] = Mus rattus, *q.v.* *Kangaroo R* =Macropus minor. *Musk R* = Ondatra *Russian musk R* = Mygale. *R hare* = Lagomys. *R. mole* = Spalax.

Ratchet, (rach'et). A circular wheel, with teeth on the circumference, by which it can be moved or its motion stayed.


Ratchet-wheel.

Ratel, (rā'tel) = Mellivora capensis: a weasel-like animal, belonging to Ursidæ; also called Viverra mellivora.

Ratio, (rā shi-o). [The Latin word.] The relative values of two quantities of the same kind, the number of times which one contains the other. *Anharmonic R*: not harharmonic *v.* Harmonic R. *Harmonic R.*, *v* Harmonic. *Inverse R*, when an increase of one quantity produces a decrease of another, as when more power requires less time for a given quantity of work

Ratitæ, (rat'i-tē). [L. *ratis*, raft] Birds whose sternum is flat; *cf* Carinatæ = Ostriches, emus, &c.; also called Struthionidæ, *q v.*

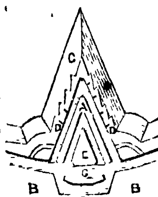
Rattan, (rat'tan). [*Rôtan*, the Malay name] =Calamus: a small variety of the palm tree, the stem of which is used for walking-sticks &c.

Rattle, (rat'tl). A name given to some plants from the rattling of the ripe seeds. *Red R.*=Pedicularis, named from its red flowers. *Yellow R* =Rhinanthus Crista galli, has yellow flowers.

Rattle-snake=Crotalus horridus, *q v.*, found only in America. *R. fern* = Botrychium Virginicum. *R. reed*=Eryngium.


Rattle-snake.

Ravelin, (rav'lin). [The French word.] A triangular projecting portion of a fortification.

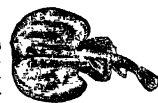


Ravelin
A, ravelin, B, bastion; C, glacis, D, covered way, E, cavalier, F, curtain, G, ditch

Raven, (rā'vn). [*Hræfen*, the A.-S. name.] = Corvus corax: a bird, usually black, belonging to Corvidæ.

Ray, (rā). [*Radius*, the Latin word.] A fish = Raia. *Beaked R.* = Rhinobatis. *Eagle R.* = Myliobatis. *Electric R.* = Torpedo. *Horned R.* = Cephaloptera. *Sting R.* = Trygon.

Ray, (rā). [1. *Raia*, the Latin name, 2. *Radius*, the Latin word.] 1. = Raia, &c.: a flat fish, belonging to Elasmobranchii. 2. A line of light. *Ordinary R.*: in double refraction, the ray which follows the ordinary rule of refraction. *Extraordinary R.*: in double refraction, the ray which does not follow the ordinary rule of refraction. *R. grass* = Rye, *q.v.*


Ray.

Ray's classification of plants—

Flowerless.
Flowering.
Dicotyledones.
Monocotyledones.

Rayed animals = Radiata, *q.v.*

Rays. *v.* Actinic R. and Herschelian R.

Razor. *R. bill*: a bird belonging to Natatores. *R. shell* = Solen ensis a burrowing mollusc; also called Razor fish.

Reading, (red ing). [R in Berkshire.] *R. beds*, *v.* Woolwich and Reading beds.

Real, (rē'al). [L. *res*, thing.] *R. image*, *v.* Image. *R. focus*, *v.* Focus.

Realgar, (rē-al'gar). [The French word.] = As_2S_2 = Red sulphide of arsenicum: a mineral, with oblique crystallization, belonging to the arsenic group.

Reaumur's thermometer, in which the freezing point of water is 0 and the boiling point 80°, the distance between being divided into 80 equal parts or degrees.

Reaumuriaceæ, (rō-mū-ri-ā'se-ē). [Reamur.] = Reaumuriads: shrubs, with scale-like leaves, belonging to Guttiferales.

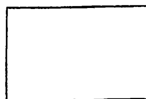
Recent, (rē'sent). [*Recens*, the Latin word.] *R rocks*, with fossil shells and Mammalia, all of living species.

Receptacle, (re-sep'ta-kl). [*Receptaculum*, the Latin word.] = Torus. the disc of the flower, which supports the sexual organs.

Reciprocals, (rē-sip'rō-klz). [L. *reciproco*, I interchange.] The quotients of the division of unity by a given series of numbers, *e.g.*, ½ and ⅕ are the reciprocals of 2 and 5.

Reckoning. *v.* Dead-reckoning.

Rectangle, (rek'tang-l). [L. *rectus*, right; Angle, *q.v.*] = Oblong: a figure formed by four straight lines, all the angles being right angles, but the opposite sides only being equal.


Rectangle.

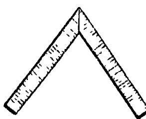
Rectangular, (rek-tang'ū-lar). [Rectangle, *q.v.*] Oblong: having the form of a rectangle.

Rectum, (rek'tum) [L. *rectus*, straight.] The extremity of the large intestine which opens outwardly.

Recurvirostra, (re-ker-vi-ros'tra) [L. *recurvus*, bent back; *rostrum*, beak.] A wading bird, with curved beak; also called Avocet, *q.v.*

Red, (red). [*Rad*, the A.-S. word.] *R. ant* = Formica sanguinea. *R. antimony* = Kermesite, *q.v.* *R. bole*: a clay coloured by oxide of iron. *R. breast* = Erythraca = Robin red-breast. *R. coral*, *v.* Coral. *R. crag*. One of the older Pliocene beds, with marine shells, found in Suffolk. *R dyes*: madder, alizarin, logwood, &c. *R flames*, *v.* R prominences. *R grouse* = Lagopus Scoticus *R. lead* = Minium, *q.v.* *R. ochre*: a variety of red hæmatite. *R. phosphorus* = Amorphous phosphorus. *R. pigments* = Ochre, bole, chrome, mercury, &c. *R. prominences*: seen in total eclipses of the sun, from 30 to 70 thousand miles in extent. *R races*: Andian, Pampean, Guarang, &c. *R. sandstone*, *v.* Red Sandstone. *R. silver ore*: Dark R = Pyrargyrite; Light R: Proustite *R. snow* = Protococcus nivali. *R. stars*: Aldebaran, Antares, Arcturus, Fomalhaut, Betelguese. *R valerian* = Centranthus ruber. *R. vitriol* = Botryogen, *q v.* *R. weed* = Papaver rheas = Red poppy.

Redan, (re-dan). [The French word.] A field work, shaped like a V, with the apex towards the enemy.


Redan

Redoubt, (re-dout'). [*Redoute*, the French word.] A small enclosed fort.


Redoubt.

Redruthite, (red'rō-thit). [Redruth, in Cornwall.] A variety of chalcocite, *q.v*; an ore of copper.

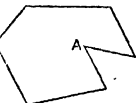
Reducing flame of blowpipe. The portion where incomplete combustion takes place, so that any oxydised substance is deprived of its oxygen

Reduvius, (re-dū-vi'us). *v.* Fly-bug.

Reed, (red). [*Hreod*, the A.-S. name.] = Phragmites, *q.v.* *Sea R.* = Marram grass, *q.v.* *R. bur* = Sparganium. *R. mace* = Typha. *R. warbler* = Salicaria strepera. *R. wren* = R. warbler, *q.v.*

Reef, (rēf). [*Riff*, the German word.] A range of rocks rising but little above the surface of the water.

Re-entering angle. One of which the angle points inwards.



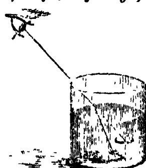
Re entering Angle

Reflecting, (re-flek'ting). [L. *reflecto*, I turn backwards.] *R surface:* one which throws back light, heat, &c. *cf.* Refraction. *R. telescopes*=Catoptric telescopes: in which the image is reflected from a metallic mirror to the eye-piece.

Refracted, (re-frak'ted). [L. *refractum*, broken up.] *v* Refraction.

Refracting, (re-frak'ting). [L. *refrango*, I break up] Causing refraction, *q.v* *R. telescopes*=Dioptric telescopes: in which the rays are brought to a focus by refraction through lenses.

Refraction, (re-frak'shun) [L. *refrango*, I break up.] A deflection of rays of light, sound, or heat, when they pass from one medium to another, as from air to water, in a direction oblique to the common surface. *Double R.* = When two rays of light come to the eye from one point in an object viewed through a doubly-refracting substance, such as Iceland spar; one being called the ordinary ray, the other the extraordinary ray. *Index of R.*: the ratio between the sines of the incident and of the refracted angles, *i.e.*, of the angles which the lines make with the common surface of the two media. *Prismatic R*, *v.* Spectrum.


Refraction.

Regelation, (rē-jel-ā'shun). [L. *re-*, again; *gelatio*, freezing] The freezing together of two partially thawed substances, as of two pieces of ice.

Regions of plants. Arranged according to their general character and locality. *Iberian R*: evergreen plants in humid districts. *Forschammer's R.* of marine plants. &c.

Regnault, (rā'nault). [M. Regnault.] *R.'s hygrometer*, *v.* Hygrometer.

Regular animals. Burmeister's term for Radiata, Bryozoa, and Anthozoa.

Regulus, (reg'ū-lus). [L. *regulus*, petty king] 1. The pure metal obtained by smelting. 2. The chief star in Leo; also called Cor Leonis and the Lion's Heart. 3. A bird, belonging to Sylviadæ.

Rein-deer = Cladonia rangiferina; scarce, apparently dying out; the only deer of which both sexes have horns. *R. period;* traces of which are found in S. of France, intermediate between Paleolithic and Neolithic: marked by remains of rein-deer, mammoth, &c. *R. moss*=Cenomyce rangiferina: a lichen


Reindeer.

Reinforce, (rē-in-fors'). The thick portion of a gun, near the breech.

Reiset's bases. 1st B.=Platodiammine, *q.v.* 2nd B.=Platosammine, *q v.*

Relay, (rē-lā'). [F. *relais*, relaxation.] A voltaic or magnetic battery which is set in action by one previously at work.

Relief. In sculpture, the projection of figures from the groundwork *High R.*=Alto R., *v.* Alto-relievo. *Low R.*=Bas R., *v.* Basso-relievo.

Remains. *Human R.*, *v.* Human remains. *Organic R* =Fossils, *q.v.*

Remora, (rem'ō-ra). [L *remora*, obstacle] =Echeneis remora: a fish which attaches itself temporarily, by a sucking disc, to some large fish, for purposes of locomotion.

Renaissance, (rē-nā'sanz). [The French word] A style of architecture, common in the 16th century, which followed the general use of Gothic architecture, named from being to some extent a revival of classic styles.

Renal, (re'nal) [L. *renes*, kidneys] Belonging to the kidneys.

Reniform, (ren'i-form). [L. *renes*, kidneys] =Kidney-shaped

Rennet, (ren'net). [*Gerinnan*, A.-S. to curdle.] =The inner membrane of Abomasum: used to cause milk to coagulate. *Cheese R.*= Galium verum.

Repeating circle. An instrument used for surveying instead of the sextant.

Reproduction, (rē-prō-duk'shun). The replacing of lost portions, or increase of number, of individuals; the latter takes place when growth begins to cease. *Sexual R.*= Gamogenesis. *Non-sexual R.*=Fission, gemmation, &c.

Reptiles, (rep'tīlz). [*Reptilis*, the Latin name.]=Reptilia, *q v.* *Natural history of R* =Herpetology.

Reptilia, (rep-til'i-a). [L. *repto*, I crawl.] Tortoises, crocodiles, serpents, &c.: vertebrate animals, usually with horny epidermis, four limbs, and cold red blood, resemble Mammalia in having an amnion and an allantois, but differ in having each ramus in several pieces and not articulating directly with the skull; also named Lyrencephala, *q v.*, and Muscle Animals, *q v.*

Repulsion, (re-pul'shun). *Magnetic R.*=Diamagnetism, *q.v.*

Reredos, (rēr'dos, or rē're-dos). [*Arrière dos*, the French name] A screen, usually of wood or stone, placed at the back of the altar, above it.

Reseda, (re-sē'da)=Mignonette· an herb with small flowers, the type of Resedaceæ. *R. lutea*=Base rocket.

Resedaceæ, (re-sē-dā'se-ē). [Reseda, *q.v.*]= Weld-worts· herbs, with fleshy petals, belonging to Cistales.

Residual air, which remains in the chest and cannot be expelled=usually about 80 cubic inches.

Resilience, (re-zil'i-ens). [L. *resilio*, I spring back.]=Rebounding=Elasticity.

Resins, (rez'inz). [*Resina*, the Latin word.] Brittle inflammable substances obtained from plants, mostly oxidised essential oils: when subjected to friction they become electric. *Fossil R*: amber, asphalt, ozocerite, &c.

Resinous electricity = Negative electricity: developed on resinous surfaces by friction.

Resist pastes. Substances used in dyeing to prevent the colouring matter acting on the parts where they are applied.

Resistance, (re-zis'tans). *Electric R*: the force required to electrify a given body, and therefore the resistance to the passage of a current. *Unit of R.*: Jacobi's, French, Ohm's, &c.; *v.* Electro-magnetic units.

Resonance, (rez'ō-nans). [L. *resono*, I resound.] The prolongation of sound. *v.* Sound.

Resorcin, (re-sor'sin). [Orcin, *q.v.*]=$C_6H_6O_2$: a white crystalline substance.

Respiration, (res-pi-rā'shun). [L. *respiro*, I breathe again.] The removal from the blood of carbonic acid and steam, and the transfer into it of oxygen, effected by lungs or branchiæ.

Respirative, (re-spī'ra-tiv). [Respiration, *q.v.*] Performing respiration. *R. animals*: Oken's term for Articulata.

Respirator, (res-pi-rā'tor). [L. *respiro*, I breathe again.] An apparatus for warming the inhaled fresh air by means of the heat contained in the exhaled breath.

Rest-harrow = Ononis: named from its long roots arresting the harrow.

Restiaceæ, (res-ti-ā'se-ē) = Cordleafs: herbs, with glumaceous flowers, belonging to Glumales.

Resultant, (re-zul'tant). [L. *resulto*, I leap back.] In dynamics, the force arising from two or more combined forces acting on one point, which is equal to their sum only when they act in the same straight line, and in the same direction.

Retene, (ret'ēn)=$C_{18}H_{18}$: a hydrocarbon, obtained in the distillation of coal tar: also called Tetramethyl anthracene.

Reticulate, (re-tik'u-lāt). [L. *reticulum*, small net.] The same as fibrous, but with the fibres crossing each other irregularly.


Reticulate leaf.

Reticulum, (re-tik'ū-lum). [L. *reticulum*, small net.] The 2nd stomach of Ruminants; named from its honeycombed structure.

Retina, (ret'i-na). [L. *rete*, net.] The termination of the optic nerve, which spreads over the interior of the eyeball in a thin layer, which can be affected so as to cause the sensation of sight.

Retort, (re-tort'). [L. *retortus*, bent back.] A vessel, usually of glass, consisting generally of a bulb and long neck; used for distilling in chemical operations.


Retort.

Retrenchment, (re-trench'ment). A work of fortification constructed within, or behind, another.

Return shock. In electricity; *v.* Shock.

Retuse, (re-tūs'). [L. *retusus*, blunted.] Very blunt.

Retzius's division of the human race—
With long heads=Dolichocephali.
With short heads=Brachycephali.

Revetment, (re-vet'ment). [*Revêtement*, the French word.] A facing of wood, stone, &c., used to give permanence to the steep incline of an embankment.

Revolutions of the Moon. *Nodical R* in 27d. 5h. 6m., in which the Moon revolves round the Earth. *Synodical R.* in 29d. 12h 44m., in which the Moon returns to the same position relatively to the Sun. Every 18 years 10 days the Sun, Moon, and Earth return to precisely the same relative positions; this period was called Saros by the ancient astronomers.

Revolver, (re-vol'ver.) A fire-arm with a number of chambers fitted to one barrel, so that, all being loaded, they can be discharged in rapid succession.

Reynard, (rā'nard). [Ger. *regin*, thought; *hart*, strong.] = Fox, *q.v.*; named from its cunning.

Rhabdammina, (rab-dam'min-a) [Gk. *rhabdos*, rod.] *R. abyssorum*: a bright orange rhizopod, very hard; its case contains phosphate of iron, the only example known.

Rhabdocœli, (rab-do-sē-li). [Gr. *rhabdos*, rod.] Used by Siebold for a sub-division of Turbellarii: animals having elongated and rounded bodies.

Rhætic beds, (rē'tik). [Rhætia, in Lombardy.] =Penarth beds of England = Fossiliferous beds of limestone between the Trias and Lias formations.

Rhamnaceæ, (ram-nā'se-ē). [Rhamnus, *q.v.*] =Rhamnads: shrubs and trees belonging to Rhamnales.

Rhamnales, (ram-nā'lēz). [Rhamnus, *q.v.*] Plants, with monodichlamydeous flowers and compound ovary, forming a division of Perigynous Exogens.

Rhamnus, (ram'nus). [Gk. *rhamnos*, white thorn.] = Buckthorn: a shrub, with small flower, the type of Rhamnaceæ. *R. frangula*=Berry-bearing alder.

Rhamphastidæ, (ram-fas'ti-dē). [Gk. *rhamphos*, bird's beak.] = Toucans: birds with very large beaks, belonging to Scansores.

Rhamphorhynchus, (ram-for-ing'kus). [Gk. *rhamphos*, bird's beak; *rhygchos*, beak.] A pterosaurian, or flying-lizard; of which remains are found in Oolite rocks.

Rhea, (rē'a). 1.=Rheas: a bird belonging to Struthionidæ; called American ostrich. 2. A star.

Rheadic, (rē'a-dik). *R. acid*=Papaveric acid.

Rheas. *v.* Rhea.

Rhenite, (ren'īt). [River Rhine.] A mineral, chiefly hydrated phosphate of copper.

Rheostat, (rē'ō-stat). [Gk. *rheos*, current; *statos*, standing.] An instrument for measuring the resistance of any given substance

to the passage through it of a galvanic current.

Rheotome, (rē'ō-tōm) [Gk. *rheos*, current; *tome*, cutting.] *v* Break.

Rhesus monkey, (rē'sus)=Macacus rhesus.

Rheum, (rē'um). [*Rheon*, the Greek name.] Rhubarb: a plant belonging to Polygonaceæ.

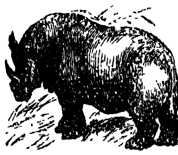
Rhinaisthetics, (rī-nā-sthet'iks). [Gk *rhin*, nose; *aisthetis*, perception.] Odour sensations.

Rhinanthus, (rī-nan'thus) [Gk. *rhin*, nose; *anthos*, flower.] Yellow-rattle: a plant belonging to Scrophulariaceæ.

Rhine loess. Beds belonging to Post-Pliocene rocks.

Rhinencephalic, (rī-nen-se-fal'ik). [Gk. *rhin*, nose; *enkephalon*, brain.]=Nasal: belonging to the front of the cranium.

Rhinoceros, (rī-nos'e-ros). [*Rhinokeros*, the Greek name.] A large quadruped belonging to Pachydermata; found in S. Africa and India only; fossil remains found in Pliocene and Pleistocene rocks. *R. bird*= Buceros rhinoceros: found in India


Rhinoceros

Rhinocryptis, (rī-nō-krip'tis). [Gk. *rhin*, nose; *cryptos*, hidden.]=Mud-fish, *q.v.*

Rhinolophus, (rī-nol'o-fus) [Gk *rhin*, nose; *lophos*, crest.]=Vampire bat. a variety of the bat, *q.v.*

Rhizanths, (riz'anths). [Gk. *rhiza*, root; *anthos*, flower] = Rhizogens: root parasites, plants which have no foliage leaves, apparently intermediate between flowering and flowerless plants.

Rhizobolaceæ, (riz-ō-bol-ā'se-ē). [Gk. *rhiza*, root; *bole*, casting.]=Rhizobols: large trees, with leathery palmate leaves and large flowers, belonging to Guttiferales.

Rhizocarpeæ, (riz-ō-kar'pe-ē). [Gk. *rhiza*, root, *karpos*, fruit.]=Marsileaceæ, *q.v* Vascular cryptogamic plants, which branch like ferns.

Rhizocephala, (riz-ō-sef'a-la). [Gk. *rhiza*, root; *kephale*, head.] Crustacean parasitic animals, which bury their heads in the bodies on which they live. A division of Pectostraca: locomotive when young.

Rhizodont, (riz'ō-dont). [Gk. *rhiza*, root; *odous*, tooth.] Teeth with branching fangs, which anchylose with the jaw.

Rhizogens, (riz'ō-jenz). [Gk. *rhiza*, root; *gennao*, I produce.] Parasitic plants, with scales for leaves, forming a primary division of flowering plants.

Rhizoids, (riz'oidz). [Gk. *rhiza*, root; *eidos*, form.] Root-like appendages.

Rhizome, (riz'ōm). [Gk. *rhizoma*, rooting.] A prostrate stem, which throws out fresh rootlets.

Rhizomorpha, (riz-ō-mor'fa). [Gk. *rhiza*, root; *morphe*, shape.] A fungus, sometimes phosphorescent; named from resemblance to a root.

Rhizophaga, (riz-of'a-ga). [Gk. *rhiza*, root; *phaga*, I eat.] A division of Marsupialia, represented by the wombat.

Rhizophoraceæ, (riz-of-ō-rā'se-ē). [Gk. *rhiza*, root; *phoreo*, I bear]=Mangroves: tropical littoral shrubs and trees, with polypetalous flowers, the seeds of which germinate before falling, belonging to Myrtales.

Rhizopoda, (riz-op'o-da). [Gk. *rhiza*, root, *pous*, foot.] Simple gelatinous bodies, mostly microscopic, forming a division of Protozoa, which can extend at will any portions of the body as pseudopodia, which resemble roots in appearance. "Life without organization:" a class of Infusoria, as arranged by Hœven and by Ehrenberg.

Rhizostoma, (riz-os'to-ma). [Gk. *rhiza*, root; *stoma*, mouth.] A genus of Acalephæ, *q v.*

Rhodi, (rō'di). [Rhodium, *q.v.*] A prefix implying the presence of rhodium.

Rhodium, (rō'di-um). [Gk. *rhodon*, rose.]= Rh: one of the noble metals, a very hard, white, almost infusible metal, usually found with platinum.

Rhododendron, (rō-dō-den'dron). [Gk. *rhodon*, rose, *dendron*, tree] An evergreen shrub, belonging to Ericaceæ, having handsome flowers.

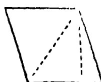
Rhodomenia, (rō-dō-mē'ni-a). [Gk. *rhodon*, rose.] An edible sea-weed.

Rhodonite, (rō'don-it). [Gk. *rhodon*, rose] A metallic mineral, with oblique crystallization, chiefly silicate of manganese, belongs to the manganese group.

Rhodospermeæ, (rō-dos-sper'me-ē). [Gk. *rhodon*, rose; *sperma*, seed] A sub-division of Algæ, *q v.*

Rhodymeniaceæ, (rō-di-men-i-ā'se-ē). Algæ, forming a sub-division of Rhodospermeæ. *R. palmata*=Dulse.

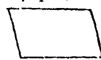
Rhomb, (romb or rom). [*Rhombus*, the Latin word.] A figure formed by four equal straight lines, the angles of which are not right angles, as in the diamond *Fresnel's R.*, *v.* Fresnel. *R. spar*=A mineral, chiefly carbonate of calcium.


Rhomb

Rhombohedral system, (rom-bō-hē'dral). *R system of crystallization*: in which the axes make equal angles and the parameters are equal.

Rhombohedron, (rom-bō-hē'dron). [Rhomb, *q v*, Gk. *hedra*, seat] A solid figure bounded by six equal rhombs.

Rhomboid, (rom'boid). [Rhomb, *q v.*; Gk. *eidos*, form.] A four-sided figure in which none of the angles are right angles, and the opposite sides only are equal.


Rhomboid.

Rhombus, (rom'bus). [The Latin name] A fish belonging to Pleuronectidæ. *R. maximus*=Bannock fleuk=Turbot.

Rhubarb, (rō-barb). [*Rhubarbe*, the French name.]=Rheum: a plant belonging to Polygonaceæ. *Monk's R.*=Rumex Alpinus.

Rhumb, (rum). A point of the compass. *R. line*: a line drawn towards a given point of

the compass, so that it cuts all the meridians it crosses at the same angle.

Rhus, (rus). Sumach: a plant belonging to Anacardiaceæ.

Rhynchæa, (rin-kē'a) [Gk. *rhygchos*, beak.]=Painted snipe. *v.* Snipe.

Rhynchophora, (ring-kof'o-ra) [Gk. *rhygchos*, beak; *phoreo*, I bear]=Weevils. a primary division of beetles, also called Tetramera

Rhynchosaurus, (ring-ko-saw'rus) [Gk *rhygchos*, beak; *saura*, lizard.] A reptile, known by fossil remains found in Trias rocks.

Rhynconella, (ring-kō-nel'la). [Gk. *rhygchos*, beak. A genus of Brachiopoda, found from Silurian period until now

Ribbands. Pieces of quartering, or squared timber, used to keep the timbers of a ship in their places.

Ribbon *R fish*=Gymnetrus. *R. worm*=Nemertida, *q v.*

Ribes=Grossulariaceæ: shrubs belonging to Grossales. *R. grossularia*=Gooseberry. *R. rubrum*=Red currant=Wild currant

Rib-grass=Plantago=Plantain, *q v.*

Rib worts=Plantaginaceæ, *q v.*

Ribs. Slender curved bones, extending from the spine, in vertebrate animals. *False R.*. that do not reach to the sternum or breast-bone. *True R* connect the spine and breast-bone.

Ricciaceæ, (riks-i ā'se-ē)=Crystal-worts: small aquatic plants belonging to Muscales

Riccioli. R.'s map of the Moon: in which the nomenclature of Langreen is restored.

Rice, (rīs). [*Oryza*, the Latin name.]=Oryza sativa: a plant belonging to Gramınaceæ, grown only in warm and damp districts, the grains of which are much used as food, being chiefly composed of starch *R bird*=Java sparrow = Loxia oryzivora. *R. grains*: a name used for the small bright spots on the photosphere of the sun, or in its atmosphere. *R. weevil* = Sitophilus oryzæ: lives on rice *R. paper*: made from pith of Aralia papyrifera


Rice

Ricinus, (ris'in-us). [L *ricinus.*] Castor-oil plant.

Ricochet, (rik'ō-shā) [The French word] Bounding. *R firing*: so that the shots strike the ground once or twice before the object aimed at is reached

Rifled gun. With two or more spiral grooves in the surface of the bore, so that the projectile has a rotatory motion; shorter than smooth-bore guns for the same charge. *cf.* Musket.

Right, (rit). [*Riht*, the A.-S. word.] *R angled* =Orthogonal=Perpendicular *R. ascension*: the distance of a heavenly body from the first point of Aries, measured along the celestial equator. *R. handed*=Dextral. *R. whale*, *v.* Whale.

Rigor mortis, (rig'or mor'tis). [The Latin words] The stiffness of death.

Rigel, (ri'gel). A blue star; the lower western star in the quadrilateral of Orion.

Rilles, (rilz). Marks on the Moon's surface, probably trenches.

Rime, (rim). [*Hrim*, the A.-S. word.] Hoar-frost; congealed dew.

Ring. *R. digit* = Fourth finger. *R. dove*= Columba palumbus. *R. formations*: on surface of Moon, supposed to be not volcanic, there being no central cone; also called Walled Plains and Ramparted Plains *R. thrush*=Merula torquata. *R. vortex*: represented by a number of small circles placed side by side so as to form a larger circle, like beads on a string.

Ringed, (ringd) *R. snake*=Coluber natrix. *R. worms*: Hœven's term for Annulata.

Rings, (ringz). *Fairy R*: term applied to small places where the grass is especially luxuriant. *R. of Saturn*: the principal are named A, B, C; *v.* Saturn. *Newton's R.*, *v.* Newton's. *Nobili's R.*, *v.* Nobili's.

Ringworm, (ring'wėrm). [Ring and Worm, *q v.*] An eruptive disease, named from the circular form of the eruptions

Rinman's Green. A pigment owing its colour to oxides of cobalt and zinc; also called Cobalt-green.

Ritteric rays=Actinic rays of light, *q.v.*: those which are most capable of chemical action.

River, (riv'ėr). *R. hog*=Potamochœrus penicillatus=Hydrochœrus *R. horse*=Hippopotamus. *R. snails*=Paludina, *q.v*

Rivinus's classification of plants. Made in 1690, according to the corolla.

Roach, (rōch). [*Reohche*, the A.-S. name.] =Leuciscus rutilus; a fish belonging to Cyprinidæ.


Roach.

Road metal = Stone for road making.

Roads, (rōdz). *Parallel R.* of Glen Roy: three parallel lines of beach. *v.* Roy.

Roan, (rō'an) *R tree*: a tree belonging to Pyrus, also called Mountain Ash.

Roast-beef plant=Iris fœtidissima.

Robber, (rob'bėr). *R. crabs*=Paguridæ, *q.v.*

Robert, (rob'ėrt). *Herb R.*=Geranium Robertianum.

Robertsonia, (rob-ėrt-sō'ni-a). *R. umbrosa*= London pride; also called Saxifraga umbrosa.

Robin, (rob'in). *Golden R.*=Baltimore oriole. *Ragged R.*=Lychnis flos cuculi. *R. redbreast* =Erythaca.

Robinia, (rō-bin'i-a). [M. Robin] A plant belonging to Leguminaceæ. *R pseudacacia* =Bastard acacia; also called Locust Tree.

Robur, (rō'bėr). [The Latin word.]=British oak=Quercus robur.

Robur Caroli, (rō'bėr kar'o-li)=King Charles's oak: a southern constellation, formed by Halley in 1676, of a portion of Argo Navis.

Roccella, (rōk-sel'la). [*Orchella*, the Spanish word.] A lichen, found on rocks and walls near the sea. *R. fusi-formis* = Mauritius weed. *R. tinctoria*=Archal, *q.v.*; also called Orchilla, *q.v.*

Rochelle salt, (rō-shel')=$KNaC_4H_4O_6\,4H_2O$: hydrated tartrate of sodium and potassium.

Rock, (rok). [*Roche*, the French word.] Any

solid material, whether in large or small pieces, which forms part of the earth's crust *Farewell R.*=Millstone grit, *q v.* *R. cork*= A fibrous variety of asbestos. *R cress*= Arabis. *R. crystal* = A pure colourless variety of quartz. *R. formation, v.* Petrology. *R. hair lichen*=Alectoria jubata. *R. leather, v.* Asbestos. *R. moss* = Cudbear lichen=Lecanora tartarea. *R. oil*=Mineral naphtha. *R. rose*=Cistus, now called Helianthemum. *R. salt:* beds of chloride of sodium, or common salt. *R. slaters* = Ligia, crustaceans belonging to Isopoda. *R. warbler*=Origma=Saxicola solitaria.

Rocks. Classified as aqueous, metamorphic, plutonic, and volcanic.

Rocket, (rok'et) [*Roquette,* the French name] =Diplotaxis an herb, belonging to Brassicaceæ *London R.*=Sisymbrium irio. *Sea R* =Cakile. *Yellow R.* =Barbarea.

Rocking-stone=Logan, *q.v.*

Rod *Golden R* =Solidago

Rodentia, (rō-den'shia). [L. *rodens,* gnawing.] =Glires: gnawing animals, belonging to Mammalia, including rats, squirrels, hares, beavers, porcupines, &c.

Rods and **Cones** of the eye: minute cone like bodies and rods forming the surface of the retina in contact with the pigment cells lining the choroid.

Roe, (rō), [Ger *rogen,* spawn] Ovary and eggs of fish. *Soft R.*= Milt=Testes of male fish. *R. buck* [*rāh,* the A.-S. name], an animal belonging to Cervidæ. *R. stone*=Oolite, *q.v.*, named from the egg-like appearance of the concretions.



Roebuck

Roger's nomenclature. [Mr. Rogers, an American geologist.] Of geology, especially of American rocks.

Rolandi. *Fissure of R :* in the brain.

Roller. A crow-like bird, belonging to Corvidæ.

Rolleston's classification: of animals. [Professor R. of Oxford.]

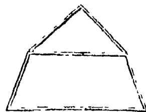
- Vertebrata.
  - Allantoidea.
    - Mammalia.
    - Sauropsida.
  - Anallantoidea.
    - Ichthyopsida.
- Mollusca
  - Odontophora.
  - Anodontophora.
- Molluscoidea.
- Arthropoda.
  - Tracheata.
  - Branchiata.
- Vermes.
  - Annulata.
  - Annuloida.
- Echinodermata.
- Cœlenterata.
- Protozoa.

Roman. *R. architecture:* derived chiefly from the Greek: marked by a circular arch and profusion of sculpture. *R. cement:* a compound of pozzuolana and lime.

Romanesque, (rō-ma-nesk'). [Roman, *q.v*] Related to, or derived from, the Roman. *R. architecture:* intermediate between Roman and Gothic, marked by circular arches, decorative doorways, small windows, and square massive towers.

Rood, (rood). [2. A.-S. *rōd,* cross] 1.=36¼ square yards=¼ acre. 2. A representation of the Holy Cross. *R. loft:* a gallery to support the holy rood.

Roof, (rōōf). [*Hrof,* the A.-S. word] The upper and outer covering of a building *Curb R.* = Mansard R, *q.v.* *Gable R :* terminating in a gable, *q v.* *Hipped R* formed by four sloping sides. *Mansard R :* formed of two sets of rafters, the upper being the more inclined.



Mansard roof.

Rook, (rōk) [A.-S. *hroca,* chattering] A bird, belonging to Corvidæ.



Rook.

Root, (rōōt) [*Rod,* the Danish word.] 1 In mathematics: the number required as the basis to produce, by involution, a given number: *e.g*, 4 is the square root of $4^2=4\times4=16$, 5 is the square root of $5^2=5\times5=25$. 2 is the cube root of $2^3=2\times2\times2=8$. Square root written thus: $\sqrt{\ }$, or $\sqrt[2]{\ }$, *e g.*, square root of 9 is written $\sqrt{9}$, or 9; cube root is written thus: $\sqrt[3]{\ }$. 2. In botany, that part of a plant which fixes it to the ground, or whatever it may grow on; generally descends into the ground, and never has leaves, scales, or buds. *Man R.*=Ipomea leptophylla, *v* Man *R. fibres of mushroom*=Mycelium. *R. hairs*=Rhizoids

Roric figures. [L. *ros,* dew.]=Breath figures, *q.v.*

Rorqual, (ror'kwal) [Norw. *rorqualus,* a whale with folds.]=Balænoptera musculus: a whale *v.* Cetacea.

Rosa, (rō'za). [The Latin name]=Rose: a shrub with large flowers, the type of Rosaceæ. *R. canina*=Dog rose. *R. rubiginosa*=Sweet briar.

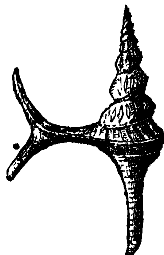
Rosaceæ,(rō-zā'se-ē). [Rosa, *q v.*]=Rose-worts: herbs and shrubs with polypetalous flowers, belonging to Rosales: include strawberry, rose, bramble, apple, pear, plum, &c.

Rosales, (rō-zā'lēz). [Rosa, *q.v*] Plants with monodichlamydeous flowers and apocarpous fruits, forming a division of Perigynous Exogens, and including Rosaceæ, Fabaceæ, &c.

Rosaniline, (rō-zan'i-lin) [Rose and Aniline.] =Magenta = $C_{20}H_{19}N_3.H_2O$ = Aniline red, one of the aniline dyes.

Rose, (rōz). [Rosa, *q.v.*]=Rosa, *q.v.* *China R.*=Hibiscus rosa-chinensis. *Christmas R.* Helleborous niger. *Dog R.*=Rosa canina *R. beetles*=Cetoniidæ. *R. of Jericho*=Anastatica hierochuntina. *R. Mary*=Rosmarinus: belongs to Lamiaceæ. *R. root*=Sedum rhodiola. *R. sawfly*=Hylotoma, *q.v.* *R. tangles*=Ceramiaceæ, *v.* Algæ. *R. wood*=Timber of Physocalymma floribunda, &c. *R. worts*=Rosaceæ.

Roscine, (rō'zin). [Rose, *q.v.*] A rose-coloured dye-stuff obtained from aniline



Rostellaria

Rosin, (roz'in). [Resin, *q.v.*] = Colophony: the solid residue of distilled turpentine; a compound of several hydrocarbons.

Rosso-antico, (ros-so-an-tē'kō). [The Italian name.] A red-veined variety of marble.

Rostellaria, (ros-tel-lā'ri-a). A gasteropod, having a long, spiral, univalve shell.

Rostrum, (ros'trum) [L. *rostrum*, beak.] 1. The anterior end of the carapace in crustacean animals. 2. Used generally as=Beak.

Rot, (rot). [A.-S. *rotian*, to putrefy.] To decay. *Dry R.* = Polyporus destructor, Merulius lacrymans, &c: fungi which destroy wood. *White R.* = Hydrocotyle, *q.v.*

Rotating pendulum = Conical pendulum = Governor, *q.v.*

Rotatoria, (rō-tā-tō'ri-a). [L. *rota*, wheel]= Rotifera, *q.v.*

Rotation, (rō-tā'shun). [L. *rota*, wheel] Revolution upon an axis, like the spinning of a top, as in the Sun, Moon, Earth, and other planets, &c *R. of crops:* a recurring series of different crops grown on the same ground.

Rotatory, (rō'ta-to-ri). [L. *rota*, wheel.] *R. muscles*, *v.* Muscles. *R. polarization:* when a ray of plane-polarised light changes the plane in which it is polarised to the right or to the left, owing to its passage through Iceland spar, sugar, &c.

Rothliegende=Red-layers: a rock belonging to the Permian system.

Rotifera, (rō-tif'e-ra). [*Rota*, wheel: *fero*, I bear.] = Wheel animalcules = Rotatoria minute aquatic animals (removed from Infusoria to Scolecida) having vibrating cilia, in appearance resembling wheels, and living in colonies.

Rottbœlla, (rot-bel'la). [C. Rottböll, a Danish botanist.]=Hard grass: a plant belonging to Graminaceæ.

Rotten-stone. A soft earthly mineral, chiefly silicate of aluminum and carbon.

Rouge, (rōzh). [Fr. *rouge*, red.] Ferric oxide, used as a red cosmetic.

Round. *R. worm*=Ascaris lumbricoides.

Rove-beetles=Brachelytra, *q.v.*

Rowan-tree=Pyrus aucuparia

Roxburghiaceæ, (roks-ber-gi-ā'se-ē) = Roxburgh-worts: twining shrubs of India, with large showy flowers and tuberous roots, belonging to Dictyogens.

Royal. *R. fern*=Osmunda.

Roy. Parallel roads of Glen Roy: three terraces, varying in breath from 10 to 70 feet, and following the contour of the glen; probably three lines of beach, marking successive rises in the land

Rubber. *Indian R.*=Caoutchouc, *q.v.* *Vulcanised Indian R.* = Caoutchouc and sulphur.

Rubble, (rub'bl). Accumulations of angular rock fragments, also used for rough stone and brick work.

Rubellite, (rō'bel-līt). [L. *ruber*, red; Gk. *lithos*, stone] A red variety of tourmaline.

Rubeola, (rō-bē'o-la). [L. *ruber*, red] An eruptive disease, resembling scarlet fever and measles.

Rubia, (rō'bi-a). [L. *rubeus*, red]=Madder: an herb belonging to Galiaceæ, which gives a red dye.

Rubiaceæ, (rō-bi-ā'se-ē). [Rubia, *q.v.*] = Galiaceæ, *q.v.*

Rubiacic acid, (rō-bi-ā'sik). [Rubia, *q.v.*] $=C_{32}H_{18}O_{17}$: obtained from madder.

Rubian, (ro'bi-an). [Rubia, *q.v.*] The bitter principle of madder.

Rubidia, (rō-bid'i-a). [Rubidium, *q.v.*] = Rb_2O: rubidic oxide=Oxide of rubidium.

Rubidic, (rō-bid'ik). [Rubidium, *q.v.*] Having rubidium as a constituent.

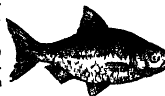
Rubidine, (rō'bi-dīn). [L. *ruber*, red.] = $C_{11}H_{17}N$: one of the pyridine bases

Rubidium, (rō-bid'i-um) [L. *rubidus*, dark red.]=Rb': one of the alkali metals, a white soft metal, found in vegetables, with such intense affinity for oxygen that it burns in contact with either air or water, its spectrum has dark red bands

Rubus, (rō'bus). [The Latin name.]=Blackberry, &c., an herb or shrub, belonging to Rosaceæ. *R. chamæmorus*=Cloudberry. *R. fruticosus* = Blackberry. *R. idæus* = Raspberry.

Ruby, (rō'bi). [L. *ruber*, red] A red transparent variety of corundum, or native alumina. *Oriental R.*=Spinel. *R. tailed flies* = Chrysididæ, belonging to Hymenoptera.

Rudd. [A.-S. *rud*, red.] A carp-like fish, belonging to Leuciscus, also called Red-eye



Rudd

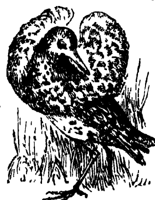
Rudder. [*Rōdher*, the A.-S word.] An apparatus to govern the direction in which a moving ship goes.

Rudistes, (rō-dis'tēs). An acephalous mollusc, with bivalve shell, peculiar to Upper Cretaceous beds.

Rue, (rō). [*Ruta*, the Latin name.] = Ruta graveolens: an herb belonging to Rutaceæ.

Rue-worts=Rutaceæ, *q.v.*

Ruff=Machetes pugnax: a wading bird, very pugnacious; belongs to Scolopacidæ; named from its ruff-like neck feathers.


Ruff

Ruffled. *R. grouse* = Bonasa, or Bonasia, *q v*

Rufigallic acid=$C_8H_4O_4$. H_2O = Parellagic acid: obtained from gallic acid.

Rugose, (rō'gōs). [L. *rugosus*, wrinkled] Extinct corals, named from their wrinkled appearance

Ruhmkorff's coil, (rum'korfs). [Herr R.] An apparatus for making and breaking a galvanic current with great rapidity, and so generating a secondary current, consisting of two coils of covered wire, one coil being in connection with a galvanic battery, the current through which, at the moment it is made or broken, induces a secondary current in the other coil; also called Inductorium and Induction Coil.

Rule=Norma, *q.v.*

Rule-of-three. The problem of three out of four terms in proportion being given in order that the fourth may be found, also called Proportion.

Rulers. *Marquois R*; *v.* Marquois.

Rum. [A corruption of the W. Indian word.] Spirit distilled from sugar-cane, molasses, &c.

Rumanyos. A European race.

Rumex, (rō'meks). [The Latin name.]=Dock: a plant belonging to Polygonaceæ. *R. Alpinus*=Monk's rhubarb.

Rumen, (rō'men). [L. *rumen*, throat.] The first stomach of ruminant animals

Rumia, (rō'mi-a). *R. cratægata*=Brimstone moth.

Ruminantia, (rō-min-an'shi-a). [L. *ruminor*, I chew again] Hoofed animals, such as the sheep, which have a series of four stomachs, frontal horns, and cloven hoofs. Ruminant animals with sharp canine teeth, have usually no horns. *v.* Rumination.

Rumination, (rō-mi-nā'shun). [*Ruminatio*, the Latin word] The chewing of food after it has been swallowed; practised by animals belonging to Ruminantia, who have several stomachs, from the second of which the food is again returned to the mouth for remastication.

Runners=Cursores, *q.v.*

Running water. *Force of R.*; *v.* Force.

Rupert's drops. Small globules of suddenly cooled glass, having a long thin projection; when the end of this is broken off the globule breaks up into small fragments.

Rupicapra, (rō-pi-kā'pra). *R. tragus* = Chamois, *q v.*

Ruppellia, (rup-pel'li-a). A crab-like animal

Rupture, (rup'tūr). [L. *rumpo*, I break] The breaking of any portion of the intestines; also called Hernia. *R. wort*=Herniaria, *q v.*

Ruscus, (rus'kus)=Butcher's-broom: a plant belonging to Liliaceæ.

Rush, (rush). [*Ruscum*, the Latin name.] =Juncus: a plant belonging to Juncaceæ. *Dutch R.*=Equisetum hyemale. *Flowering R.*=Butomus. *Wood R.*=Luzula. *R. grass* =Illecebrum.

Rushes=Juncaceæ, *q.v.*

Russet, (rus'set). [L. *russus*, red.] A colour compounded of orange and purple.

Russia. *R leather*; *v.* Leather.

Russian. *R. musk-rat*=Mygale. *v.* Desman.

Rust, (rust). [The A.-S. word.] Oxide of iron, especially when formed by the exposure of iron to damp air; also used generally for any metallic oxide so formed.

Rusticated masonry. Having the intervals between the stones marked by grooves.

Ruta, (rō'ta). [The Latin name.]=Rue: an herb, the type of Rutaceæ.

Rutaceæ, (rō-tā'se-ē). [Ruta, *q.v.*] = Rueworts: trees and shrubs, belonging to Rutales.

Rutales, (rō-tā'lēz). [Ruta, *q.v.*] Plants with monodichlamydeous flowers, forming a division of Hypogynous Exogens: including Connaraceæ, Aurantiaceæ, Rutaceæ, &c.

Ruthenic, (rō-thē'nik) [Ruthenium, *q.v.*] *R anhydride*=RuO_3=Ruthenic acid.

Ruthenium, (rō-thē'ni-um)=Ru'''': one of the noble metals; a hard, brittle, almost infusible metal, usually found with platinum.

Rutic acid, (rō'tik). [Ruta, *q v.*]=$C_{10}H_{20}O_2$ = $C_8H_{16}O_2$ = Capric acid, obtained from cocoa-nut oil, butter, &c.

Rutile, (rō'til) [L *rutilus*, red]=Titanite, *q v.*

Rutylene, (rō'ti-lēn). [Rutyl, *q.v.*]=$C_{10}H_{20}$: a hydrocarbon of the olefine series.

Rutyl, (rō'til). [Ruta, *q.v.*; Gk. *hyle*, material.]=Capryl, *q.v.*

Rye, (rī). [*Ryge*, the A.-S. name.] = Secale cereale. *R. grass*=Lolium.

Rynchops, (rin'kops). [Gk. *rhygchos*, beak.] =Rhynchops: an aquatic bird, belonging to Palmipedes, with very long bill, also called Shearwater, from its habit of skimming the surface of the water.

S.

Sable, (sā'bl). [*Zabel*, the German name.] A weasel-like animal belonging to Mustelidæ=Martes zibellina. *American S.*=Pine marten


Sable.

Sabot, (sa-bō'). [F *sabot*, shoe.] A wooden stand for a shell, serving to keep it steady while being fired.

Saccharic acid, (sak-kar'ik). [L. *saccharum*, sugar.]=$C_6H_{10}O_8$: obtained from sugar.

Saccharimeter, (sak-ka-rim'e-ter). [L. *saccharum*, sugar.] An instrument for analysing sugars, by examining the effect upon polarised light.

Saccharine, (sak'ka-rĭn). [L. *saccharum*, sugar.] *S group of organic compounds*=Amylaceous group=Hydrates of carbon: sugars and starches: sucrose, lactose, dextrose, starch, gum arabic, &c.; found abundantly in plants.

Saccharomyces, (sak-ka-rō-mī'sēz). [L. *saccharum*, sugar; *mykes*, mushroom.] Yeast-fungi=Ferment of beer, of flour-leaven, of must of wine, &c.; small round cells, growing in fluids, and causing alcoholic fermentation, belonging to Ascomycetes.

Saccharose, (sak'ka-rōs) [L. *saccharum*, sugar] =Cane-sugar=Sucrose, *v.* Sugar. *Hydrated S* =Dextrose.

Saccharous, (sak'ka-rus). [L. *saccharum*, sugar] Relating to sugar. *S fermentation*: one of the varieties of fermentation, of which sugar is one of the chief products.

Saccharum, (sak'ka-rum). [L *saccharum*, sugar] A plant belonging to Graminaceæ. *S. officinale*=Indian salt. *S. officinarum*= Sugar-cane.

Saccular, (sak'kū-lar). [L. *sacculus*, little sack] Sack-like.

Sack-tree=Antiaris, *q.v.* The bark is taken off bodily and used as sacks.

Sacrum, (sā'krum). [L. *os*, bone: *sacrum*, sacred.] The vertebræ which, together with the ilia, form the pelvis, formed by the anchylosis of the sacral vertebræ.

Sadalmelik. [The Arabic name.]=α Aquarii: chief star of the constellation Aquarius.

Safety. *S. lamp.* an oil lamp surrounded by a fine metallic gauze, which absorbs the heat of the flame and prevents it lighting any exterior gas. *S. valve:* an opening in a steam-boiler, covered by a loaded valve, so that the steam can escape when its tension is sufficient to raise it


Safety lamp

Safflower, (saf'flow-er). [*Saffron* and *Flower*.]=Carthamus tinctorius, from which a red dye-stuff is obtained

Saffron, (saf'fron). [*Safran*, the French word.]=Dried stigmas of Crocus sativa, a yellow dye-stuff. *Bastard S.*=Carthamus tinctorius. *Meadow S.* = Colchicum.

Sagina, (sa-jī'na)=Pearl-wort: a small herb belonging to Caryophyllaceæ.

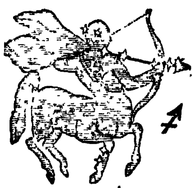
Sage, (sāj). [The French name.]=Salvia: an aromatic herb belonging to Lamiaceæ. *Wood S.*=Teucrium scorodonia.

Sagging, (sag'ging). [A.-S. *sigan*, to sink down.] The strain in a ship's timbers which tends to break it in half across the keel, as when unduly laden amidships. *cf.* Hogging.

Sagitta, (saj'it-ta). [L. *sagitta*, arrow.] 1. =The Arrow: one of the northern constellations, containing a rich cluster of stars, Messier Sagitta. 2.=Chætognatha, *q.v.*

Sagittaria, (saj-i-tā'ri-a). [L. *sagitta*, arrow.] =Arrow-head: an herb belonging to Alismaceæ.

Sagittarius, (saj-i-tā'ri-us). [The Latin name.] The Archer: the ninth sign of the zodiac; one of the autumnal signs.


Sagittarius

Sago, (sā'go). [*Sagu*, the Malay name.] A variety of starch obtained from the sago palm.

Sagoin, (sa-goin'). [The American name] =Sagouin: a monkey belonging to Callithrix, *q.v.*


Sagoin

Sahlite, (sa'līt) [Sahla, in Sweden; Gr. *lithos*, stone.]=Malacolite: a dark-green variety of pyroxene.

Sail-fish = Selachus maximus: a shark-like fish belonging to Squalidæ.

Sailing. *Great Circle S.* =Tangent S. *Middle latitude S.:* in which the mean latitude of the course is taken as the basis. *Oblique S:* finding the true course of a vessel, from its apparent course and the force of a given current. *Plane S.:* calculated on the assumption that the earth is flat. *Traverse S.:* finding the distance, in a straight line, between two points in the course of a ship. *Tangent S.*, in which the course is a series of tangents to a great circle of the globe.

Sainfoin, (sān'foin). [F. *sain*, wholesome; *foin*, hay]=Onobrychis sativa: a plant belonging to Leguminaceæ. *Moving S.*=Hedysarum gyrans.

Sajou, (sa'jew)=Cebus, *q.v.*

Sajous, (sa'jewz)=Cebidæ, *q.v.*

Sakis, (sā'kis). Monkeys having long, bushy, non-prehensile tails, especially those belonging to Pithecia.

Salamanders, (sal-a-man'derz). [*Salamandra*, the Latin name.] Amphibious animals belonging to Urodela, *q.v.*


Salamander

Salamandroids, (sal-a-man'droidz). [Salamander, *q.v.*; Gk. *eidos*, form.] Animals belonging to Urodela, *q.v.*, which resemble the Salamander.

Sal ammoniac, (sal am-mō'ni-ak). [L. *sal*, salt, *ammoniac*, of ammonia.]=NH_4Cl=Hydrochlorate of ammonium: a mineral found in cubic crystals in volcanic districts.

Salep, (sal'ep). A variety of starch, from Orchis mascula, of which bassorin, *q.v.*, is the chief constituent.

Sal gem=Rock-salt.

Salicaceæ, (sal-i-kā'se-ē). [L. *salix*, willow.] =Willow-worts: trees and shrubs with apetalous flowers, belonging to Amentales.

Salicaria, (sal-i-kā′ri-a). [L. *salix*, willow.] A bird belonging to Sylviadæ, *v.* Warbler. *S. palustris*=Marsh warbler.

Salicin, (sal′i-sin). [L. *salix*, willow.] = $C_{13}H_{18}O_7$: a crystalline glucoside substance found in the bark of the willow, which breaks up into glucose and saligenin.

Salicornia, (sal-i-kor′ni-a) [L *sal*, salt, *cornu*, horn] A plant belonging to Chenopodiaceæ, named from the form of the branches. *S. herbacea*=Marsh samphire=Glass-wort.

Salicylamide, (sal-i-sil′a-mid). [Salicyl and Amide, *q.v*]=$C_7H_7NO_2$: an amide of the salicylic series.

Salicyl, (sal′i-sil). [Salix, *q.v* ; Gk. *hyle*, material.]=C_7H_5O : the radicle of the salicylic series, which is not known as a separate compound.

Salicylates, (sal′i-si-lāts). [Salicylic, *q v.*] Compounds of salicylic acids and bases.

Salicyl hydride=Salicylous acid=$C_7H_6O_2$= Oil of spiræa: a fragrant oil obtained from the plant spiræa.

Salicylic acid, (sal′i-sil-ik). [Salicin, *q.v*]= $C_7H_6O_3$: a crystalline substance obtained by acting on salicin with caustic potash.

Salicylic series of compounds, having salicyl as a constituent compound.

Salient, (sā′li-ent). [L. *saliens*, leaping] Projecting. *S. angle:* one pointing outwards; *cf.* Re-entering angle.

Salimeter, (sal-im′e-ter). [L *sal*, salt; Gk. *metron*, measure] An instrument for measuring the amount of salt present in any given solution.

Saline, (sā′lin or sa-lin′). [*Salinus*, the French word] Salt: containing salt as a constituent. *S earths:* nitre, rock-salt, borax, natron, &c.

Saliva, (sa-lī′va). [L. *saliva*, spittle.] A watery fluid, which converts starch into grape sugar, secreted by the parotid submaxillary and sublingual glands.

Salivation, (sal-i-vā′shun). [Saliva, *q v.*] A profuse discharge of saliva; also called Ptyalism.

Salix, (sā′liks). [The Latin name]=Willow: a plant, the type of Salicaceæ, *S. caprea*= Sallow=Goat willow. *S mirsinites*=Mountain willow. *S. purpurea:* violet osier.

Sallow, (sal′lō). [*Salowig*, the A.-S. name] =Salix caprea. *v.* Salix.

Salmon, (sam′un). [*Salmo*, the Latin name.] =Salmo salar : a fish, the type of Salmonidæ, found in seas and rivers: begins as a higher animal than a frog and ends as a lower. *Stages of S.:* parr, grilse, salmon.


Salmon.

Salmonidæ, (sam′on-i-dē). [Salmon, *q.v* , Gk. *eidos*, form.] Salmons, trouts, &c.: a family of fishes belonging to Malacopterygii.

Salpa, (sal′pa). A molluscous animal, the type of Salpians, *q.v.*

Salpians, (sal′pi-anz). [Salpa, *q v.*] Acephalous mollusca, forming a sub-division of Tunicata, in which there are alternate generations; *i.e.*, a solitary S. produces a chain of embryos, each of which, in turn, produces a solitary salpian. *v.* Tunicata.

Salpidæ, (sal′pi-dē). [Salpa, *q.v.*; Gk. *eidos*, form]=Salpians, *q.v.*

Salsify, (sal si-fi)=Tragopogon porrifolius, *q v.*

Salsola, (sal′sō-la). [L. *salsus*, salt.]=Saltwort: plants found on sea-shores, belonging to Chenopodiaceæ.

Salt, (sawlt). [*Sealt*, the A.-S. word] 1 = Chloride of sodium: common salt. 2. A chemical term originally expressing a compound of an acid and a base, but now used in a much wider sense. *Hair S.: v.* Hair. *Indian S* =Saccharum officinale. *S. tree*= Halimodendron, *q.v.* *S.-wort* = Salsola, *q v*

Salts. *v.* Salt, 2. *Haloid S.* resemble sea-salt. *Hydro-S.* contain an acid of which hydrogen, and not oxygen, is an important constituent. *Neutral S.:* those that are neither acid nor alkaline. *Oxy-S.* consist of an acid and a base, each containing oxygen.

Saltatoria, (sal-ta-tō′ri-a). [L *saltator*, jumper.]=Jumpers: a division of Orthoptera, including grasshoppers.

Saltpetre, (salt-pe′ter) [Salt, *q.v* ; L *petra*, of the rock]=KNO_3=Nitre=Potassic nitrate. a crystalline substance used in gunpowder to supply the oxygen required for the complete combustion of the sulphur and carbon, which are the other ingredients.

Salvadoraceæ, (sal-vā-do-rā′se-ē) [S. Salvador]=Salvadorads: shrubs and trees with leathery leaves, belonging to Echiales. *S. Persica*=Mustard-tree.

Salvator, (sal-vā′tor). [The Latin name.]= Safe-guard: a large American lizard.

Salver - shaped = Hypocrateriform : having somewhat the form of a tray used of flowers, the corollas of which spread open widely.

Salvia, (sal′vi-a) [L *salveo*, I heal.]=Sage: an herb belonging to Lamiaceæ. *S. verbenace* =Clary

Samara, (sā′ma-ra). [L. *samara*, seed of elm] A thin, wing-like, indehiscent fruit, containing but few seeds.

Sambucus, (sam-bū′kus). [Gk. *sambyke*, sackbut.]=Elder: shrubs and trees belonging to Caprifoliaceæ. *S. ebulus*=Dane-wort.

Samiel=Sirocco, *q.v.*

Samolus, (sam′o-lus)=Brook-weed: an herb belonging to Primulaceæ.

Samphire, (sam′fir)=Crithmum, *q v.* *Golden S.*=Inula crithmoides.

Samydaceæ, (sam-i-dā′se-ē) = Samyds: trees and shrubs, chiefly tropical, with apetalous axillary flowers, belonging to Violales.

Sanadin, (san′a-din). A crystalline variety of orthoclase, or potash felspar.

Sand, (sand). [The A.-S name.]=Very small stones. *Green S.:* rocks between Wealden and Chalk. *S. battery:* a weak constant battery; zinc, copper, and sharp sand in dilute sulphuric acid; very portable. *S. box-tree*= Hura, *q.v.* *S. crabs*=Ocypoda. swift-footed crabs, which live only on land. *S. eel*=Ammodytes tobianus. *S. leek*=Allium scorodopasum. *S. lizard*=Lacerta agilis. *S. hopper*


Sand-piper

=Talitrus locusta: a crustacean. *S. martin*=Cotile riparia bores holes in sand rock. *S piper* =Tringa. *S. shot:* small balls, from 1¼ oz. to 4 lbs, named from being at one time cast in sand-moulds *S. stars*, *v* Ophiuridæ. *S tubes*, *v.* Fulgurites. *S. worm*= Nereis versicolor, belongs to Errantia.

Sandal, (san'dal). [The Arabic name] *S. wood.* of Santalum album. *Red S.*=Pterocarpus santalinus.

Sandarach, (san'da-rak). *S. tree* = Callitris quadrivalvis, yielding a resin called sandarach.

Sandsmelt=Atherina presbyter, *q.v.*

Sandstone. An aggregation of grains of sand. *Pebbly S.*=Puddingstone. *New Red S* = Trias, *q.v.* *Old Red S.*=Devonian, *q v.*

Sanguiferous system, (sang-gwif er-ous). [L. *sanguis*, blood; *fero*, I bear.] Includes heart, ventricles, aorta, &c, the system of vessels adapted to the circulation of the blood

Sanguisorba, (sang-gwis-or'ba) = Burnet: a plant belonging to Sanguisorbaceæ, also called Poterium.

Sanguisorbaceæ, (sang-gwis-or-bā'se-ē). [Sanguisorba, *q v.*] = Sanguisorbs: herbs and shrubs, with small apetalous flowers, belonging to Rosales.

Sanicle, (san'i-kl). [L. *sano*, I heal.] = Sanicula: an herb belonging to Apiaceæ.

Santalaceæ, (san-ta-lā'se-ē). [Santalum, *q v*] =Sandalwork: shrubs and trees, with small apetalous flowers, belonging to Asarales.

Santalum, (san'ta-lum). A tree with fragrant wood, the type of Santalaceæ. *S. album*= Sandal-wood.

Santonin, (san'to-nin) [Gk. *santonion*, wormwood.] A crystalline substance obtained from wormwood.

Sap, (sap). [The A.-S. word.] 1. In fortification, a method of digging trenches by placing baskets full of earth in front of the men. 2. The fluid which plants absorb from the earth, corresponding somewhat to the blood of animals. *Milky S:* a sign of caoutchouc. *S. balls*=Polyporei: fungi belonging to Hymenomycetes.

Sapajous, (sap'a-jō) [*Saguassa*, the Brazilian name] = Cebus: an arboreal monkey of N. America having a long tail; mild and lively in manner. *Brown S.* = Capuchin monkey

Sapan-wood, (sa-pan'). [A corruption of the Brazilian name.] A dye-wood.

Saphirine, (saf'i-rin). [Sapphire, *q.v.*] A blue variety of spinel, *q.v.*

Sapindaceæ, (sap-in-dā'se-ē). [Sapindus, *q.v.*] =Soap-worts: horse-chestnuts, &c, trees, shrubs, and herbs, often poisonous, with small irregular flowers, belonging to Sapindales; also called Æsculaceæ and Hippocastaneæ.

Sapindales, (sap-in-dā'lēz). Plants with monodichlamydeous flowers, forming a division of Hypogynous Exogens.

Sapindus, (sap-in'dus). [*Sapo Indicus*, Indian soap] A tropical plant, the type of Sapindaceæ, named from the berries being used as soap.

Saponaria, (sap-ō-nā'ri-a). [L. *sapo*, soap]= Soap-wort: an herb belonging to Caryophyllaceæ, named from the leaves being used as soap; also called Fuller's herb.

Saponic acid, (sap'ō-nik). [Saponin, *q.v.*]= Esculic acid: obtained from saponin; also called Polygalic acid.

Saponification, (sap-on-if-i-kā'shun). [L. *sapo*, soap, *facio*, I make.] Conversion into soap. *v.* Soap.

Saponin, (sap'ō-nin). [Saponaria, *q v.*]= $C_{32}H_{54}O_{18}$, a glucoside substance obtained from the soap plant Saponaria.

Saponite, (sap'ō-nīt). [L *sapo*, soap.]= Steatite, *q v.*: a mineral, chiefly silicate of magnesia.

Sapota, (sap'o-ta). [L. *sapo*, soap.] A plant belonging to Sapotaceæ. *S. Muelleri*=Bully tree.

Sapotaceæ, (sap-ō-tā'se-ē). [Sapota, *q.v*]= Sapotads: shrubs and trees, chiefly tropical, often milky, with monopetalous flowers, belonging to Rhamnales.

Sappan-wood. *v.* Sapan-wood.

Sapphire, (saf'īr). [*Sapphirus*, the Latin name.] A transparent variety of corundum, or native alumina, usually blue, a rare gem.

Sap-wood=Alburnum, *q.v.*

Saracenic, (sar-a-sen ik)=Arabic. *S. architecture*=Arabian architecture, *q.v.*

Sarcocollads, (sar-kō-kol'ladz). [Gk. *sarx*, flesh; *kolla*, glue.]=Penæaceæ, *q.v.*

Sarcodaria, (sar-kō-dā'ri-a). [Gk. *sarx*, flesh] Used by Milne-Edwards for Infusoria and Sponges.

Sarcode, (sär'kōd). [Gk. *sarx*, flesh, *hodos*, way.] Gelatinous substances, approximating to flesh, forming the body in Protozoa and Infusoria = Rudimental flesh: a variety of muscular tissue, *q v.*

Sarcocephalus, (sar-kō-sef'a-lus). [Gk. *sarx*, flesh, *kephale*, head.] *S. esculentus*=Guinea peach.

Sarcolemma, (sär-kō-lem'ma). [Gk. *sarx*, flesh; *lemma*, skin.] A tough, elastic membrane, acting as a sheath or covering to the muscles.

Sarcophaga, (sär-kof'a-ga). [Gk. *sarx*, flesh; *phago*, I eat.]=Sarcophile: carnivorous Marsupialia; also used generally for any flesh-eating animals.

Sarcorhamphus, (sär-kō-ram'pus). [Gk. *sarx*, flesh.] A vulture-like bird. *S. papa*=King vulture.

Sarcosine, (sär-kō'sīn). [Gk. *sarx*, flesh.]= $C_3H_7NO_2$, a crystalline alkaloid substance found in kreatine.

Sarcostemma, (sar-kō-stem'ma). [Gk. *sarx*, flesh; *stemma*, crown] A plant belonging to Asclepiadaceæ. *S. glaucum*=Ipecacuanha of Venezuela.

Sardine, (sär'dēn). [Sardinia.] A small herring-like fish=Young pilchards.

Sardonyx, (sar'dō-niks). [The Latin name.] A variety of the onyx.
Sargasso Sea, (sár-gas'so). [Sp. *sargazo*, sea weed.] A marine prairie, 3,000,000 of square miles, in the middle of the Atlantic. *v.* Sargassum.
Sargassum, (sár-gas'sum). [Sp. *sargazo*, sea-weed.] An edible sea-weed: a plant belonging to Fucaceæ. *S. seas:* seas of gulf-weed.
Sariama=Microdactylus, *q.v.*
Sarkine, (sar'kin). [Gk. *sarx*, flesh.]=Hypoxanthine. *v.* Xanthine.
Sarkolactic acid, (sar-kō-lak'tik). [Gk. *sarx*, flesh, Lactic, *q.v.*] A variety of lactic acid obtained from flesh.
Sarkosine, (sar'ko-sin). [Gk. *sarx*, flesh.]=Sarcosine, *q.v.*
Saros, (sā'ros)=Meton's cycle=18 solar years, 15 days, 10 hours, after which the eclipses recur in the same order on the same days.
Sarothamnus, (sa-ro-tham'nus). A plant belonging to Leguminaceæ. *S. scoparius* = Broom.
Sarraceniaceæ, (sár-ra-sen-ni-ā'se-ē) = Sarraceniads: N. American bog herbs, with pitcher-shaped leaves, belonging to Ranales.
Sarsaparilla, (sar-sa-pa-ril'la). [*Zarsaparrilla*, the Spanish name.]=Smilax: an evergreen climbing shrub, the root of which is used medicinally.
Sarsaparillas=Smilaceæ, *q.v.*
Sasin, (sas'in). An Indian variety of the antelope.


Sasin

Sassolite, (sas'sō-līt). [Sasso, in Italy.]=Sassolin, a mineral occurring in anorthic crystals, which are almost entirely boracic acid.
Satellites, (sat'el-līts). [L. *satelles*, companion.]=Moons, *q.v.*
Satin. *S. bird:* a bird belonging to Corvidæ. *S. spar:* 1.=Fibrous gypsum: a variety of native sulphate of lime. 2. A variety of arragonite, or native carbonate of lime. *S. wood* = Wood of Swietenia chloroxylon.
Saturation, (sat-ū-rā'shun). [*Saturatio*, the Latin word.] 1. When one substance has absorbed, or dissolved, as much of another as it has capacity for absorbing or dissolving, it is said to be saturated. 2. When an acid is entirely neutralised by an alkaline substance, or *vice versa*, it is said to be saturated.
Saturn, (sat'ern). [Classical.] One of the larger planets: the sixth planet from the Sun, at a distance of about 872 millions of miles; diameter about 70,000 miles, year about 30 of ours; has eight moons and three surrounding rings. *S. satellites or moons:* Titan, Japetus, Rhea, Dione, Tethys, Enceladus, Mimas, and Hyperion.
Saturni, (sa-ter'nī). [Saturn, *q.v.*] *Arbor S.* =Lead tree, *q.v.*
Saturnia, (sa-ter'ni-a). [Saturn, *q.v.*] *S. atlas* =Atlas moth: builds pensile nest. *S. pavonia*=Emperor moth.
Saturnian, (sat-er'ni-an). [Saturn, *q.v.*] Belonging to Saturn.
Sauba, (saw'ba) = Leaf carrying ant = Œcodoma cephalotes: an ant, found in Amazonia, living on leaves of trees.
Sauce-alone=Sisymbrium alliaria.
Sauria, (saw'ri-a). [Gk. *saura*, lizard.]= Lizards, *v.* Lacertilia. Sometimes used as including Lacertilia and Crocodilia.
Saurian, (saw'ri-an). [Gk. *saura*, lizard.] Reptilian: relating to reptiles.
Saurichthys, (saw-rik'this). [Gk. *saura*, lizard, *ichthus*, fish.] A fish known only by fossil teeth found in Lias rocks.
Sauropsida, (saw-rop'si-da). [Gk. *saura*, lizard; *opsis*, likeness.]=Reptiles and birds: a primary division of Vertebrata, marked by the presence of air-breathing lungs, amnion, allantois, and a complex ramus, and the absence of branchiæ.
Sauropterygia, (saw-rop-ter-ij'i-a). [Gk. *saura*, lizard, *pteryx*, wing.] Extinct aquatic, marine, carnivorous reptiles. Nothosaurus, Pistosaurus, &c. = Plesiosauria of Huxley, with long necks.
Saururaceæ, (saw-rū-rā'se-ē). [Saururus, typical genus.] = Saururads: marsh herbs, with naked flowers, belonging to Piperales.
Saururæ, (saw-rō'rē). [Gk. *saura*, lizard; *oura*, tail.] = Archæopteryx, *q.v.*: extinct birds, having lizard-like tails, only one species known.
Saussure's hygrometer=Hair-hygrometer.
Saussurite, (saw'sū-rīt). [M. Saussure.] A mineral, a variety of felspar, chiefly silicate of aluminum, also called Axe-stone.
Sauvagesiaceæ, (saw-va-jes-i-ā'se-ē). [M. Sauvages.]=Sauvageads: tropical, S. American herbs and shrubs with polypetalous flowers, belonging to Violales.
Savoys, (sa-voy'). *S. cabbage:* a variety of Brassica oleraceæ.
Saw-fish=Pristis antiquorum.
Saw-fly=Tenthredo: an insect belonging to Hymenoptera, having the ovipositor modified into a double saw.


Saw-fish.

Saw-wort = Serratula, *q.v.*
Saxicola, (saks-ik'o-la). [L. *saxum*, rock: *colo*, I inhabit.] A bird, belonging to Sylviadæ. *S. œnanthe*=Wheatear. *S. rubicola*=Stone chat. *S. solitaria* =Rock warbler.
Saxifraga, (saks-if'ra-ga). [L. *saxum*, rock; *frango*, I break.]=Saxifrage: a plant, chiefly found on rocks, the type of Saxifragaceæ, secretes a fluid which catches flies. *S. umbrosa*=London pride.
Saxifragaceæ, (saks-i-fra-gā'se-ē). [Saxifraga, *q.v.*]=Saxifrages, small herbs belonging to Saxifragales.
Saxifragales, (saks-i-fra-gā'lēz). [Saxifraga, *q.v.*] Plants with monodichlamydeous

flowers, forming a division of Perigynous Exogens.

Saxon. *S. architecture*: characterised by semicircular or triangular doorways and arches and small windows.

Scabbard fish=Lepidopus argyreus: a fish belonging to Trænioides.

Scabiosa, (skā-bi-o'sa). [L. *scabies*, scab.]=Scabious: an herb belonging to Dipsaceæ; named from being used in skin diseases. *S. succisa*=Devil's bit.

Scad, (skad) = Horse - mackerel = Scomber trachurus=Caranx trachurus: a fish belonging to Scombridæ.

Scagliola, (skal-yō'la). [*Scagliuola*, the Italian name.] Artificial marble: a composition of gypsum, isinglass, glue, &c., made to imitate marble.

Scala media, (ska'la mē'di-a). [The Latin name.] A tubular expansion in the cochlea of the human ear, between the scala vestibuli and scala cochleæ, serving the function of a key-board, of which the extremities of the auditory nerve are the keys.

Scalar, (skā'lar). [L. *scala*, ladder.] *S. quantity*: does not involve direction, Ex., the volume of a figure or mass of a body.

Scalariform, (ska-lar'i-form). [L. *scala*, ladder.]=Ladder-like.

Scald-fish. A fish belonging to Rhombus, *q.v.*

Scale, (skāl). [L. *scala*, ladder.] 1. Any regular succession of intervals. 2. An instrument graduated, usually at regular intervals. 3. *v.* Scales. *Musical S.*: a succession of musical sounds, also called Keys. *Chromatic S.*: one of thirteen consecutive semitones. *Diatonic S.*, *v.* Diatonic Scale. *Enharmonic S.*: one having small intervals. *S. of hardness*, *v.* Hardness.

Scalene, (skā-lēn'). [L. *scalenus*, unequal.] *S. triangle*: one having no two of the sides of equal lengths.


Scalene triangle

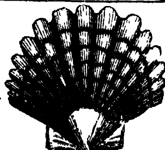
Scales. 1. *Musical S.*, *v.* Keys: the notes of musical scales are usually expressed by signs written on staves of five lines for treble and five lines for bass notes. 2. *Thermometric S.*, *Celsius's S.*=*Centigrade S.*, *Fahrenheit's S.* and *Reaumur S.*, *v.* each word. 3. A variety of horn, in the form of plates, found on fishes and some other animals. *Ctenoid S.*: with rough edges. *Cycloid S.*: smooth and horny. *Ganoid S.*: covered with enamel. *Placoid S.*: detached, often spiny.

Scale-insects=Coccidæ: kept by ants in their cells for the honey-like fluid which they exude.

Scale mosses=Jungermanniaceæ=Hepaticæ: small moss-like plants.

Scalenohedron, (ska-len-ō-hē'dron). [Gk. *skalenos*, unequal; *hedra*, seat.] A solid figure bounded by twelve equal scalene triangles.

Scallop, (skal'lop). [*Escallop*, the French name.]=Pecter Jacobæa: an oyster-like animal.


Scallop-shell

Scalops=Shrew mole=Sorex aquaticus: an animal belonging to Insectivora.

Scalpel, (skal'pel). [*Scalpellum*, the Latin word.]=Dissecting knife.

Scaly. *S. lizard*=Zootoca vivipara.

Scammonic, (skam'mo-nik). [Scammony, *q.v.*] *S. acid*=Jalapic acid: obtained from scammony.

Scammony, (skam'mo-ni). [*Scammonia*, the Latin name.]=Convolvolus scammonia.

Scandinavian floral region. Characterised by fir trees and berries.

Scandix, (skan'diks). [Gk. *scandix*, chervil.]=Shepherd's needle: an herb belonging to Apiaceæ. *S. pecten*=Venus's comb.

Scansores, (skan-sō'rez). [L. *scando*, I climb.] A sub-division of Incessores=Climbing birds, woodpeckers, cuckoos, parrots, trogons, &c., all of which build closed nests.

Scansoria, (skan-sō'ri-a). [L. *scando*, I climb.]=Didelphis, *q.v.*

Scantlings, (skan'tlingz). [Fr. *chantel*, corner-piece.] Pieces of wood, such as rails, &c., of small size.

Scaphite, (skaf'īt). [L. *scapha*, a boat.] An ammonite-like cephalopod, found only in Cretaceous rocks.

Scaphoid, (skaf'oid). [Gk. *scaphe*, boat, *eidos*, form.] One of the tarsal bones, *q.v.*

Scapolite, (skap'ō-līt). [Gk. *skapos*, rod; *lithos*, stone.]=Wernerite. A mineral, chiefly silicate of aluminium and calcium.

Scapula, (skap'ū-la). [The Latin name.]=Shoulder-blade: a triangular bone at the back or upper side of the thorax, connecting the arm and trunk; in birds called "side bone."

Scapular, (skap'ū-lar). [Scapula, *q.v.*] *S. arch*=Pectoral arch, *q.v.*

Scapulars, (skap'ū-larz). [Scapula, *q.v.*] Feathers covering the humerus and scapula.

Scarabæus, (ska-ra-bē'us). [The Latin word.] A beetle found in warm countries, belonging to Coleoptera.

Scarf-skin. [Scurf, *q.v.*]=Epidermis, *q.v.*=Cuticle.

Scarfing. [Scarp, *q.v.*] Joining two pieces of timber by cutting away a part of each, and fastening by glue, nails, bolts, &c., so that the joint is not noticeable.

Scarlatina, (skär-la-tē'na). [*Scarlatine*, the French word.] Scarlet fever: a contagious, eruptive, febrile phase of disease.

Scarlet. *S. bug*=Pyrrhocoris: an insect belonging to Heteroptera. *S. fever*=Scarlatina, *q.v.* *S. runner*=Phaseolus multiflorus.

Scarp=Escarp, *q.v.*

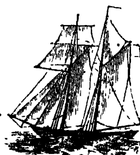
Scelidosaurus, (skel-i-dō-saw'rus). [Gk. *skelis*, leg; *saura*, lizard.] An extinct reptile belonging to Dinosauria, known only by large hollow limb-bones found in Lias rocks.

Scepaceæ, (ske-pā'se-ē). [Gk. *skepa*, covering.]=Scepad: tropical trees with leathery leaves, belonging to Euphorbiales.

Scheat=β Pegasi: the second star in the constellation Pegasus.
Scheele's green, (shē'lez) [C. W. Scheele, a Swedish chemist.]=$Cu_2As_2O_5$: arsenite of copper; a green pigment.
Scheelite, (shē'līt). [C. W. Scheele, of Sweden] =CaWO: a mineral, chiefly calcic tungstate.
Scheererite, (shēr'ėr-īt) [Herr Scheerer.] A mineral resin, also sometimes called Naphthalin.
Schiller. A walled plain in the Moon, more than 100 miles in diameter.
Schist, (shist) [Gk. *schistos*, split.] A general term for foliated clayey rocks; ? Slate. *Argillaceous S.*=Clay slate *Crystalline S.*, v. Hypogene. *Mica S.*, v. Mica.
Schizandraceæ, (skiz-an-drā'se-ē). [Gk. *schizo*, I split; *aner*, man.]=Kadsurads, trailing shrubs with small flowers, belonging to Menispermales, named from the stamens being joined at the apex.
Schizocarps, (skiz'ō kärps) [Gk. *schizo*, I split, *karpos*, fruit] The whole of a compound fruit when the parts appear separate.
Schizodus, (skiz'ō-dus). [Gk. *schizo*, I split; *odous*, tooth.] A bivalve mollusc, known by shells found in Permian rocks.

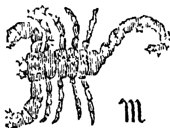

Schizodus

Schistose, (skiz'tōs) [Gk. *schizo*, I split] Foliated; splitting easily into layers.
Scholium, (skō'li-um). [*Skolion*, the Greek word.] A commentary or appendix.
Schooner, (skō'ner) [The Dutch word.] A small vessel with two or three masts
Schorl, (shorl). [Sw. *skorl*, brittle] A black opaque variety of tourmaline, common in tin mines.

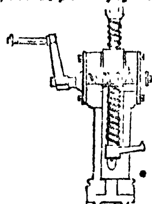

Schooner

Schorlomite, (shorl'o-mīt). [Schorl, q v.] A mineral, chiefly silico-titanate of iron and calcium.
Schrankia. *S. uncinata*=Pink sensitive plant of New Mexico.
Sciatic nerve, (sī-at'ik). [Gk. *ischion*, hip-joint.] The largest human nerve.
Sciatica, (sī-at'i-ka). [Sciatic, q.v.] An inflammatory affection of the sciatic nerve, also used generally for any rheumatic disease of the hip or thigh.
Science, (sī'ens). [L. *scientia*, knowledge.]= Classified by Herbert Spencer as: 1. *Abstract S.*=Logic and mathematics; 2. *Abstract Concrete S.* = Mechanics, chemistry, physics, &c.; 3. *Concrete S* = Astronomy, geology, biology, sociology, &c. *S. of language*=Glottology. *Medical S.:* divided into heteropathy and homœopathy, v. Medical Science. *Natural S.* = Physical S.: the knowledge of the laws governing the forces of Nature.
Scincidæ, (sing'si-dē) [Scincus, q.v., Gk. *eidos*, form.] A family of lizards, which connect lizards with serpents
Scincus, (sing'kus). [The Latin name]= Skink: an African reptile, the type of Scincidæ.
Sciæna labrax, (si-ē'na) = Labrax, q v. A fish: also called Bass
Scilla, (sil'la). [Classical.] A plant belonging to Liliaceæ. *S. maritima*=Squill. *S. nutans*=Bluebell.
Scioptic, (sī-op'tik). [Gk. *skia*, shadow; *optikos*, belonging to sight] Relating to the camera obscura, q v. *S ball*=A ball, having a lens fixed in it, capable of motion on its axis, used to admit light to the camera obscura, q.v.
Scirpus, (sir'pus). [The Latin name.] A plant, belonging to Cyperaceæ. *S. lacustris*=Bulrush
Scirrhus, (skir'us) [*Skirros*, the Greek word.] A hard tumour. a phase of the disease called cancer.
Sciuridæ, (sī-ū'ri-dē) [Sciurus, q.v.] Squirrels; a family of Rodentia, q v.
Sciurus, (sī'u-rus). [The Latin name] Squirrel: a small gnawing animal, the type of Sciuridæ. *S. Madagascariensis* = Aye-aye, q v.
Scleranthaceæ, (skler-an-thā'se-ē). [Scleranthus, q.v]=Scleranths: small weedy herbs, belonging to Ficoidales
Scleranthus, (sklo-ran'thus). [Gk. *skleros*, hard, *anthos*, flower]= Knawel: a small herb, the type of Scleranthaceæ.
Sclerobasic, (skler-ō-bā'sik). [Gk. *skleros*, hard, *basis*, foundation] A coral with soft parts round a hard central body
Sclerodermic, (skler-ō-dėr'mik) [Gk. *skleros*, hard, *derma*, skin] Hard-skinned
Sclerotic, (skle-rot'ik). [Gk *skleros*, hard] The white opaque part of the eye-ball, in some lower vertebrata somewhat bony; contains the vitreous humour of the eye. v. Sclerotica.
Sclerotica, (skle-rot'i-ka.) [Gk. *skleros*, hard] The eye-ball, the front portion of which is the cornea: in man it is fibrous; in lower animals sometimes partially ossified.
Scolecida, (skō-lē'si-da). [Skolex, q.v.; Gk. *eidos*, form] Entozoa, &c.: animals, mostly parasitic, having a water-vascular system, a division of Annuloida, including flatworms, threadworms, and Rotifera.
Scolex, (skō'leks). [Gk. *skolex*, worm.] Larva of scolecida, the head, or root, of a tapeworm.
Scolopacidæ, (skol-ō-pas'i-dē) [Scolopax, q v.; Gk *eidos*, form.] Woodcock, plover, snipe, &c., a family of birds, belonging to Grallatores.
Scolopax, (skol'ō-paks). [The Greek name] Woodcock: a bird, the type of Scolopacidæ, q v. *S gallinula*=Jack-snipe.
Scolopendra, (skol-o-pen'dra) [The Greek name]=Centipede. a small animal, belonging to Myriapoda, having a slender flattened body.

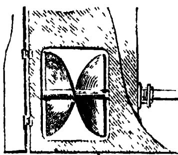
Scolopendridæ, (skol-ō-pen'dri-dē). [Skolopendra, q.v.; Gk. eidos, form] A carnivorous sub-division of Myriapoda, q v.
Scolopendrium, (skol-o-pen'dri-um) [The Greek name.]=Hart's tongue, q v.
Scomber, (skom'ber). [The Latin name.] Mackerel. the type of Scombridæ. *S. pelemys* = Bonita.
Scomberidæ=Scombridæ, q.v.
Scombridæ, (skom'bri-dē) [Scomber, q v., Gk. eidos, form]=Scomberidæ: mackerel, tunny, sword-fish, &c., a family of fishes, belonging to Acanthopterygii
Scopelus, (skop'e-lus). [L. *scopulus*, sea-rock.] A salmon-like fish, belonging to Salmonidæ. *S Humboldtii*=Argentine.
Scops, (skops)=Strix scops.
Scops-eared owl=Ephialtes scops.
Scoria, (skō'ri-a). [The Latin word] Cinders of lavas: used generally for dross or slag
Scorodite, (skō'ro-dīt). A mineral, chiefly composed of iron and manganese
Scorpion, (skor'pi-on) [*Scorpio*, the Latin name] An insect belonging to Pedipalpi, the largest of Arachnida, q v *False S.*= Ecphrynus. belong to Arachnida *S flies*= Panorpidæ, q v, named from the abdomen resembling that of a scorpion. *S. grass*= Myosotis, q.v.
Scorpio, (skor'pi-ō). [The Latin name.] 1. =The Scorpion' the eighth sign of the Zodiac, one of the autumnal signs, of which Antares is the chief star. 2. A burrowing stinging spider.


Scorpion

Scotch. *S. fir*=Pinus sylvestris. *S. pebbles* a banded variety of agate *S. sawfly* =Lophyrus. *S. thistle*=Onopordon, q v.
Scowed anchor. Having the cable tied to the shank, so that it can be pulled up by the shank if it become fixed.
Screamer. *S. bird*=Palamedea cornuta, q.v. A bird of S. America.
Screen, (skrēn). A partition in a building (especially in a church) reaching only part of the distance from the floor to the roof.
Screw, (skrō). [*Scrue*, the O. E. word.] One of the mechanical powers, q v. *S. blade* the blade of a screw-propeller. *S. jack:* an apparatus for lifting heavy bodies a short distance. *S. propeller:* an apparatus by which the force of steam is applied to moving vessels in water. *S. thread*, v. Thread.


Screw-jack.

S. pile: one which is screwed into the ground. *S. pines* = Pandanaceæ, q.v. *Fossil S.:* cast of the interior of a spiral univave shell. *Micrometer S.*, v. Micrometer.


Screw-propeller.

Scrofula, (skrof'ū-la). [The Latin word.] A phase of disease, in which tumours and ultimately ulcers are formed.
Scrophularia, (skrof-ū-lā'ri-a). [Scrofula, q v]
Scrophulariaceæ, (skrof-ū-lā-ri-ā'se-ē). [Scrofula, q.v.] Fig-worts: herbs and shrubs with monopetalous flowers, belonging to Bignonales.
Scruple, (skrō'pl). [*Scrupule*, the French word]=20 grains. See Apothecaries' Weight in Tables.
Sculpin. v. Skulpin.
Sculpture, (skul-ptūr). [*Sculptura*, the Latin word] Representation by form, *cf.* Painting, or representation by colour and form, includes carving, engraving, modelling, &c. *S. writing*=Hieroglyphic, q v
Sculpin
Scurvy, (skėr'vi) A phase of disease, caused by insufficient nutriment, characterised by debility and internal bleeding from various parts, &c, especially caused by want of vegetable food. *S. grass*=Cochlearia, q v.
Scuta, (skū'ta). [L. *scutum*, shield.] Plural of Scutum, q v.
Scutella, (skū-tel'la). [L. *scutellum*, little shield] A variety of sea-urchins' animals belonging to Echinodermata, circular in form; intermediate between star-fish and echinus.
Scutellaria, (skut-el-lā'ri-a). [L *scutella*, scale.] = Skull-cap: an herb belonging to Labiatæ.
Scutes, (skūts). v. Scutum.
Scuttles. Openings allowing communication between the different decks of a ship.
Scutum, (skū'tum). [L *scutum*, shield] One of the bony plates, or scutes, into which the derma of crocodiles, &c., are hardened.
Scutum Sobieski, (skū'tum sō-bi-es'ki). [The Latin name.] = The Shield of Sobieski: a northern constellation, of small stars only.
Scyllium, (sil'li-um). A fish, belonging to Squalidæ; also called Dog-fish and Bounce.
Scylodermata, (sil-lō-der'ma-ta). Leuckart's term for Holothuriæ and Sipunculida, forming a division of Cœlenterata.
Scytosiphon. An edible sea-weed belonging to Algæ.
Sea. The great body of water covering areas of subsidence, forming the greater part of the earth's surface, having an average depth of about 2 miles, but a great part of which is not more than 1500 fathoms in depth. The temperature of the sea in tropical and temperate regions probably averages 0° C., but is probably never below −3·5° C. The plants

are few below 50 fathoms; none below 200 fathoms. At extreme depths only animals belonging to Protozoa are found *S. anemone* =Actinidæ. *S bear*=Otaria =Phoca ursina *S blubber:* animals belonging to Cœlenterata. *S. bream*=Pagellus centrodontus. *S. calf*=Seal. *S. caterpillars*=Polynoe. *S. centipedes*=Nereidæ· animals belonging to Errantia. *S. cow*=Trichecus manatus=Manatee. *S. crawfish*=Palinurus. *S. cucumbers*=PentActæ. *S. daisy*=Bellis. *S. devil* =Lophius piscatorius. *S. ducks*=Fuligulinæ. *S· dust*=Trichodesmium. *S. eagle*, *v* Haliætus *S. egg*=Roe of Echinus: edible. *S fan*=Gorgonia, *v.* Gorgonidæ *S. fox*, *v.* Fox-shark. *S hares*=Aphysiæ. *S. heath*= Frankenia. *S. horses*=Hippocampidæ, *S. kale*=Crambe. *S. lavender*=Aggregatæ. *S league*=3½ miles nearly. *S. lemons*=Dorida. *S lilies*=Encrinites: resemble sea-stars and sea-urchins; on long stems fixed to the sea-bottom. *S. lion*=Otaria jubata. *S. lizards* =Enaliosauria *S. loach*=Rock ling=Mustella vulgaris, 6 to 18 feet long. *S. mat*= Flustra. *S mice* = Aphroditaceæ. *S. mile* =Knot=6082 feet. *S. moss*=Bryozoa. *S. mouse*, *v.* S mice. *S nest*=Holtenia Carpenteri: a siliceous sponge, somewhat like a bird's nest in form. *S. nettles* belong to Actiniæ, *q.v.* *S. otter*=Lutra marina. *S pens:* animals belonging to Actinozoa. *S. pink*= Armeria *S reed*=Marram grass. *S rocket* =Cakile: a plant belonging to Brassicaceæ. *S shrubs*=Gorgonidæ *S. slugs*=Opisthobranchiata, which have shells when young. *S. snail*=Liparis. *S. spiders*=Pantopoda. *S. swallows*=Terns. *S. unicorn*=Narwhal. *S. urchins*=Echinidea *S. weeds*=Algæ *S. wife*=Acantholabius Yarellii. *S. willow*, *v.* Gorgonia. *S woman*, *v* Fata morgana *S. worms:* belong to Errantia, *q.v.* *S. wracks*= Zosteraceæ. also=Fucaceæ.

Seal, (sēl). [*Seol*, the A.-S. name.]=Phoca: a carnivorous aquatic animal belonging to Pinnigrada. *Snouted S.* = Se. elephant= Phoca leonina.


Seal.

Seals = Phocidæ.

Sealing-wax. A mixture of shellac, turpentine, &c.

Seasons. Spring: when the sun passes through Aries, Taurus, and Gemini Summer: when the sun is highest at noon, and passes through Cancer, Leo, and Virgo. Autumn: when the sun passes through Libra, Scorpio, and Sagittarius. Winter: when the sun is lowest at noon, and passes through Capricorn, Aquarius, and Pisces. *v.* Zodiac.

Sebaceous glands, (se-bā'shē-us). [L *sebum*, tallow] Connected with the hair, secreting fatty matter.

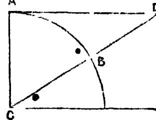
Sebacic acid, (se-bā'sik). [L. *sebum*, tallow.] =$C_{10}H_{18}O_4$: obtained from olein.

Sebastes, (se-bas'tes). A fish belonging to Acanthopterygii. *S. Norvegicus* = Norway haddock

Sebetens=Cordiaceæ, *q.v.*

Secale, (se-kā'le). [The Latin name.] A grass-plant belonging to Gramineæ. *S. cereale* =Rye.

Secant, (sē'kant). [L. *seco*, I cut.] 1. In any right-angled triangle the secant of any one of the angles is the ratio of the hypothenuse to the side joining the angle with the right angle, *e.g.*, $\frac{CD}{AC}$ = secant of angle DCA. 2. Generally, any cutting line.



Secant.

Secondary. *S acids*· derived from organic acids by the substitution of two equivalents of an alcoholic radicle for two of hydrogen. *S. battery:* a number of metal plates, usually platinum, with pieces of moistened cloth between, which, after being connected for a time with a galvanic battery, become in turn the origin of a current. *S. colours:* orange, green, purple. *S currents:* 1 In voltaic battery, smaller currents within the battery; 2. Induced currents, *q v.* *S. notes:* softer notes produced when a musical note is sounded. *S. strata*=Mesozoic=Cretaceous, Jurassic, and Triassic, originally used for all aqueous and fossiliferous strata; not found in any oceanic island, except New Zealand.

Secretary-bird = Gypogeranus serpentarius, *q.v.*

Secretions, (se-krē'shunz) [L. *secerno*, I separate] *Salivary S*, *v.* Saliva. *Gastric S.*, *v.* Gastric juice. *Pancreatic S.*, *v.* Pancreatic fluid *Renal S* of urine, by the kidneys. *Skin S* =Perspiration; the last two are also called excretions.

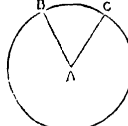

Secretary bird

Sectility, (sek-til'i-ti). [L. *seco*, I cut] The property of being easily cut into slices.

Sector, (sek'tor). [The Latin word] 1. An instrument for geometrical drawing. 2. The portion of a circle included between two radii

Sectorial teeth=Dens carnassiers = Cutting teeth.

Secular, (sek'ū-lar). [*Secularis*, the Latin word.] Periodical, occurring at or through long intervals of time.



C A B, sector.

Sedge, (sej). [*Secg*, the A.-S. name]=Carex: *q.v.* *S. warbler*=Salicaria phragmitis: found near river sides.

Sedges=Cyperaceæ, *q.v.*

Sedilia, (sē-dil'i-a). [L. *Sedilium*, the Latin word.] Seats near the altar, on the south side of a chancel.

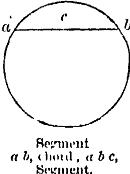
Sedimentary formations, *v.* Aqueous formations.

Sedum, (sē'dum). [The Latin name.]=Orpine, stone-crop: a succulent herb belonging to Crassulaceæ.

Seed, (sēd). [*Sæd*, the A.-S name.]=Ovule and contents; resulting from fertilisation: consists of an embryo and its receptacle or envelope. The portion of a plant which is capable of development into a similar plant. *S. buds*=Ovules. *S lac*, *v.* Lac.

Segment, (seg'ment). [*Segmentum*, the Latin word.] A portion cut off.

Segmentation, (seg-men-tā'shun). [Segment, *q.v.*] 1. Specially=Division of yelk: earliest stage of development. 2. Generally: any division into parts.



Segment *a b*, chord, *a b c*, Segment.

Seine, (sēn) [The French word.] A draught net. *v.* Nets.

Seismic, (sīs'mik) [Gk *seismos*, earthquake.] Relating to earthquakes.

Seismology, (sis-mol'ō-ji). [Gk *seismos*, earthquake, *logos*, discourse.] The science of the causes and effects of earthquakes, or "wave-shells" of motion of the earth's surface.

Selachia, (se-lā'shi-a) [Selachus, *q v.*]=Placoider sharks, dog fishes, &c: fishes forming a sub-division of Elasmobranchii.

Selachus, (sel'a-kus). [Gk *selachos*, a cartilaginous fish.] A large shark: belongs to Squalidæ. *S. maximus*=Basking shark=Squalus maximus.

Selaginaceæ, (sel-aj-in-ā'se-ē). [Gk. *selagon*, lycopodium.]=Selagids: herbs, chiefly of Cape of Good Hope, between Echiales and Bignoniales.

Selection, (sē-lek'shun). [*Selectio*, the Latin word.] *Natural S*: the survival of those plants and animals best fitted for continuous existence under given conditions, and the gradual extinction of those not so adapted. *v.* Darwinism.

Seleniates, (se-lē'ni-āts). [Selenic acid, *q.v.*] Compounds of selenic acid and bases.

Selenic acid, (se-len'ik) [Selenium, *q.v.*]=Dihydric seleniate=H_2SeO_4: an acid resembling sulphuric acid. *Hydro S*=H_2Se: an inflammable gas: also called seleniuretted hydrogen.

Selenides, (sel'e-nīdz). [Selenium, *q.v.*] Rare mineral substances: compounds of selenium and another element.

Selenite, (sel'e-nīt) A crystalline variety of gypsum, *q v.*

Selenites, (sel'e-nīts). [Selenium, *q v.*] 1. Compounds of selenious acid and a base. 2. Name used for the imaginary inhabitants of the Moon.

Selenitic, (sel-e-nit'ik). [Selenite, *q v.*] Relating to, or containing, selenite. *S. cement*: a compound of lime, gypsum, and sand.

Selenium, (sel-ē'ni-um). [Gk. *selene*, moon.] =Se″: one of the sulphur group, *q.v.* A solid substance, resembling sulphur, but darker and heavier.

Seleniuretted hydrogen=Hydroselenic acid=Dihydric selenide=H_2Se: a colourless inflammable gas, resembling hydrosulphuric acid.

Selenography, (sel-e-nog'ra-fi). [Gk. *selene*, moon, *grapho*, I write.] The description of the Moon.

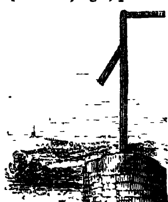
Selenographical, (sel-e-no-graf'i-kal) [Selenography, *q.v.*] Relating to the description of the Moon.

Selen-sulphur. A mineral containing selenium and sulphur.

Selipsh. An American race.

Sella Turcica, (sel'la-ter'si-ka). [The Latin name.]=Turkish saddle: a depression in the sphenoid bone.

Semaphore, (sem'a-fōr). [G. *sema*, sign, *phoreo*, I bear.] An apparatus for showing signals to be seen at a distance.


Semaphore

Semicircle, (sem-i-ser'kl). [L. *semi*, half; Circle, *q v.*]=Hemicycle, half a circle.

Semilunar valves. Between the ventricles of the heart and the great arteries.

Semitic, (sem-it'ik). [Shem, a son of Noah.] *S languages*: Arabic, Babylonian, Ethiopian, Hebrew, and Syrian.

Semitone, (sem'i-tōn). [L *semi*, half; Tone, *q.v.*]=Half a tone. *v.* Tone.

Semnopithecus, (sem-nō-pi-thē'kus). [Gk. *semnos*, venerable, *pithekos*, ape.] A large long-tailed Asiatic monkey, having short arms, a small thumb, and ischial callosities; walks on all fours.

Sempervivum, (sem-per-vīv'ūm). [L. *semper*, always, *vivo*, I live.]=House-leek; a succulent herb belonging to Crassulaceæ.

Senebiera, (sen-e-bi-ā'ra). [Senebier, a Swiss botanist.]=Wart-cress, an herb belonging to Brassicaceæ.

Senecio, (sen-ē'si-ō). [L. *senex*, old.] An herb belonging to Asteraceæ. *S. vulgaris*=Groundsel.

Senna, (sen'na). A purgative drug, obtained from the plant Cassia, belonging to Leguminaceæ, and from others.

Sensation, (sen-sā'shun). [*Sensus*, the Latin word.]=Feeling: mental impressions derived, by means of the senses, from external objects. *v.* Senses.

Sensations=Opsaisthenics=Feeling. *v.* Sensation.

Sense animals=Sensual animals: Oken's term for Mammalia.

Senses, (sen'ses). [L. *sensus*, perception.] *Five S.*: seeing, hearing, smelling, tasting, and feeling. *v.* Sensation.

Sensible. *S. horizon.* *v.* Horizon.

Sensitive. *S. animals*: *v.* Lamarck's classification. *S flames*: which quiver, and are sometimes extinguished, when a suitable

musical note is sounded. *S. plants:* whose leaves move when stimulated by touch or by the chemical action of corrosive substances, *e.g.*, mimosa, dionæa, &c. *Pink S. plant*= Schrankia uncinata.

Sensory organs. The organs of the senses of hearing, seeing, tasting, smelling.

Sensual. *S. animals:* v. Oken's classification.

Sepal, (sĕp'al). [*Sepalum*, the Latin term.] A calycine leaf *v.* Calyx.

Sepia, (sē'pi-a). [The Latin name] 1.=Cuttle-fish, *v.* Sepiadæ 2. =Indian ink, a black secretion of the Indian cuttle-fish. *S. colouring matter* of china= Oxide of iron.



a a. Sepals

Sepiadæ, (se-pī'a-dē) [*Sepia*, *q.v.*] Cuttle-fishes, *q.v.*: a sub-division of Cephalopoda, *q.v.*

Sepiostaire, (sē'pi-o-stār)=Cuttle-bone: internal shell of a cuttle-fish.

Sepoy, (sē'poy). [*Sipahai*, the native word] A native of Hindostan employed in the British army.

Septa, (sep'ta) [The Latin word] Radiating plate of a coral cell or a small division.

Septane=Heptane, *q.v.*

Septine=Heptine a hydrocarbon of the Acetylene series *v.* Hydrocarbon.

Septum, (sep'tum). [The Latin word.] Singular of septa, *q.v.*

Seralbumin, (ser-al-bū'min) [*Serum* and *Albumin*.] A variety of Albumin, *q.v.*

Seraphim. A Scotch local name for pterygotus, an Old Red Sandstone crustacean

Serein Rain falling from a cloudless sky.

a a a Septa

Serenitatis, (ser-ē-ni-tā'tis). [L. *serenitas*, clearness]=Mare Serenitatis: an elliptical plain on the Moon's surface, about 430 miles in diameter, supposed to have been the bed of a former sea.

Series. 1. In mathematics, a number of terms, increasing or decreasing according to some law. 2. A group of compounds, each containing the same radicle.

Seriform. *v.* Altaic.

Serous membranes. Membranes secreting a serous fluid; lining the cavities of the chest, lungs, &c

Serpens, (ser'penz). [The Latin name]=The Serpent: a large northern constellation, of which Unakalkay is the chief star.

Serpent, (ser'pent). [*Serpens*, the Latin name] *v.* Ophidia. *Glass S.*=Anguis ventralis. *v.* Ophisaurus.

Serpentarius=The Serpent-bearer=Ophiuchus, *q.v.*

Serpentine, (ser'pen-tīn)=$MgFeSiO_3$: 1. A compact amorphous rock, usually of variegated colours, chiefly silicate of magnesium, containing oxide of iron; one of the metamorphic rocks named from the serpent-like veins; also called Green Marble. 2. Ophiolite: a crystalline variety, crystallising in rhombs, belonging to the Serpentine group. *S. group of minerals:* includes serpentine, talc, steatite, and kaolin, all soft and light substances, which have a greasy feel, silicates of aluminium or magnesium.

Serpentis, (ser-pen'tis). [The Latin name.] Belonging to the serpent.

Serpents. *v.* Ophidia. *S. eyes*=Bufonites. *q.v.*

Serratula, (ser-rat'u-la). [L. *serratula*, little saw.]=Saw-wort: an herb belonging to Asteraceæ.

Serricornes, (ser-ri-kor'nēz). [L. *serra*, saw; *cornu*, horn.]=Sternoxi: a family of beetles, belonging to Coleoptera.

Serryia. An African people.

Sertularian, (ser-tū-lā'ri-an) [L. *sertula*, a garland] Belonging to Sertularidæ

Sertularidæ, (ser-tū-lar'i-dē) [Sertularia, the typical genus, Gk. *eidos*, form] A sub-division of Hydrozoa: also called Thecaphora

Serum, (sē'rum). [L. *serum*, watery.] A clear liquid, of yellowish colour, one of the constituents of coagulating blood=the plasma after fibrin is taken from it by the corpuscles in coagulating: a compound of water, albumen, and various salts

Service-tree=Pyrus torminalis.

Seselineæ, (ses-e-lī'ne-ē). A sub-division of Umbelliferæ.

Sesleria, (ses-lē'ri-a). [Sig. Sesler, an Italian botanist] Moor-grass, a plant belonging to Graminaceæ.

Sesqui, (ses'kwi) [The Latin word] A prefix implying a combination of two chemical elements in the ratio of 2 to 3: as Fe_2S_3

Sesqui-oxides. Of the type R_2O_3 in which two atoms of a metal combine with three atoms of oxygen

Sessile, (ses'sil) [L. *sedo*, I sit.] Having no stalk. *S. cirripedes*=Balanidæ. *S. leaf*, one having no stalk.

Seta, (sē'ta). [L. *seta*, bristle.] Any stiff hair-like process

Setaceous, (sē-tā'she-us). [Seta, *q.v.*] Bristle-like.

Setæ, (sē'tē). [Seta, *q.v.*] Bristles.

Setigerous, (se-tij'er-us) [L. *setæ*, bristles, *gero*, I carry.] Having bristles: used especially of some locomotive Annelidæ.

Setter, (set'er). A variety of the dog, trained to find birds.

Seventh In music, the interval between any note and the one six notes above it, as between A and G, B and A, &c.

Sex. *v.* Sexes.

Sexagesimal, (seks-a-jes'i-mal). [L. *sexagesimus*, sixtieth.] Belonging to 60: used for the English system of arc measurements, in which a degree equal 60 minutes, and a minute equal 60 seconds.

Sexes, (seks'es). [*Sexus*, the Latin word] Male and female: marked chiefly by difference in generative functions, but also usually by many secondary differences.

Sextane=Hexane, *q.v.*

Sextant, (seks'tant). [L. *sextans*, sixth part.] An instrument for measuring the angular distance of objects; resembles the quadrant, but measures only 60° instead of 90°.

Sextine=Diallyl, *q.v*

Sexton. *S. beetle*=Burying beetle, *v.* Necrophorus.

Sexual, (seks'u-al) [Sexes, *q.v.*] Relating to differences of sex *S. affinity* power for hybridization. *S. reproduction* = Gamogenesis, *v.* Genesis.

Shackle-joint. *v.* Joint.

Shad, (shad). [*Schade*, the German name.] Clupea alosa: a herring-like fish, belonging to Clupeidæ.


Shad.

Shaddock, (shad'-dok). [Captain Shaddock] Citrus decumana: an orange-like plant, belonging to Aurantiaceæ.

Shades. Colours mixed with black. *cf.* Hues and Tint.

Shaft, (shaft). [*Sceaft*, the A.-S. word] 1. =Axis: a general term for a long cylindrical body, of small diameter: small shaft = Spindle. 2. The upright portion of a column, between the base and the capital. 3. The vertical entrance to a pit or mine.

Shafting=Shaft, *q v.*

Shag=Pelecanus cristatus

Shagreen, (sha-grēn'). [*Chagrin*, the French word] Dried skins covered with small bony processes, as in the shark, ray, &c.

Shale, (shāl). [Ger. *schale*, shell.]=Consolidated mud: clay condensed by pressure, usually in laminæ, which are plastic in water.

Shamoy=Chamois, *q.v.*

Shamrock, (sham'rok). [Irish, *seamrog*, trefoil.] — Trifolium repens.


Shamrock

Shark, (shārk). [*Carcharus*, the Latin name] A carnivorous fish, belonging to Squalidæ, having an elongated, tapering body, and several rows of teeth. *Basking S.* = Squalus maximus. *Fox S.*=Carcharias vulpes *Hammer-headed S.* =Zygæna malleus.


Shark

Sharp, (shārp). In music, a note raised half a tone.

Shears, (shērz). An apparatus, consisting essentially of two or more pieces of timber, joined at the top, used, with tackle, for raising or lowering heavy weights.

Shear-steel. Steel adapted for cutting tools.

Shear-water=Rynchops, *q.v.*

Sheep, (shēp)=Ovis an animal belonging to Ruminantia. *S.'s bit* = S.'s scabious = Jasione. *S. rot*=Hydrocotyle vulgaris


Rocky Mountain Sheep.

Sheer-plan. Of a ship: vertical and lengthways.

Sheer-water = Shear-water, *q.v.*

Sheet-anchor. The heaviest, used in extreme cases.

Sheldrake, (shel'drāk). [Sheld=variegated, and Drake] = Tadorna: a variety of the duck; a bird belonging to Anatidæ.

Shell, (shel). [*Scell*, the A.-S. word.] 1. A general term for a hard covering, as of an oyster, a nut, &c.; *v.* Shells. 2. In artillery, a hollow iron shot, filled with explosive substances, *v.* Bomb, when small enough to be thrown by hand=Grenade. *Mortar S.*, *v.* Mortar. *Razor S.*, *v.* Razor. *S. insects*= Entomostraca, *q.v.* *S. limestone*=Muschelkalk, *q.v.*

Shellac, (shel'lak). *v.* Lac.

Shells 1 Coverings, formed of carbonate of lime, secreted by molluscous and other animals, *v.* Shell 2. Hollow projectiles, filled with explosive combustibles or bullets. *Ear S* =Haliotidæ, *q.v.*

Shepherd's. *S. needle*=Scandix. *S. purse*= Capsella.

Sherardia, (she-rār'di-a). [Mr. Sherrard.]= Field-madder; an herb belonging to Rubiaceæ.

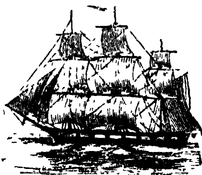
Shickard. A walled plain in the Moon, more than 100 miles diameter.

Shield. *S. fern* = Aspidium. *Water S.* = Hydropeltidæ.

Shift=Fault, *q v.*

Shingle=Pebbles, *q.v.*

Ship, (ship). [*Scip*, the A.-S. word.] A large vessel of wood or iron, adapted for a means of transport across the water. *Guinea S*, *v.* Guinea.


Ship

Shock. *Electric S.*: in static, or frictional, electricity, the discharge of an accumulation of electric force through the body: in dynamical, or chemical, electricity, the series of shocks of a series of secondary currents. *v.* Galvanic S. *Return S*: when a discharge of electricity between the earth and a cloud is immediately followed by a second discharge, between the earth and another cloud, the second discharge is called the return shock.

Shoddy, (shod'di). Old wool, obtained from worn-out blankets, carpets, &c.

Shooting stars=Meteors=Bolides, *q.v.*

Shore-weed=Litorella, *q v.*

Short. *S. headed* = Brachycephalic, *q.v.* *S. sight*=Myopy, *q.v.*

Shot, (shot). [A.-S. *scyte*, a blow.] *Case S.*, *v.* Case-shot. *Grape S*, *v.* Grape-shot.

Shrapnel-shell. [Named from the inventor.] Filled with bullets, which are dispersed when the shell bursts.

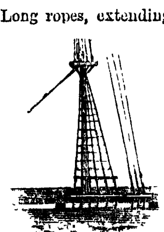
Shrew, (shroo). [*Screawa*, the A.-S. name.] =Sorex=Shrew-mouse, small animals belonging to Insectivora; also called Erdshrew. *Elephant S.* = Macroscelides. *S. mole*=Scalops.

Shrikes, (shriks). Lanius: a migratory bird belonging to Dentirostres; also called Butcher-bird.

Shrimp, (shrimp). [A.-S. *scrymman*, to dry up.] 1.=Crangon: a small crustacean animal, the type of Crangonidæ, belonging to Podophthalmia, *q v.* 2. *Fairy S.* =Chirocephalus diaphanus. *Fresh-water S* =Gammarus pulex. *Glass S* =Erichthus. *Opossum S.*=Mysis.


Shrimp

Shrouds, (shroudz). Long ropes, extending from the mast-head to the sides of a ship.


Shrouds.

Shrub, (shrub) [*Scrob*, the A.-S. name] A plant of smaller size than a tree, but larger than an herb. *Sea - shrubs* = Gorgonidæ.

Shunt, (shunt). [Shun.] In electricity, a wire diverting a part of the current.

Shushwaps. An American people.

Siamang. A variety of the gibbon, *q v.*

Sibbaldia, (sib-bal di-a). [Mr. Sibbald.] A plant belonging to Rosaceæ.

Sickle. A group of stars, of which Regulus is the chief, in the constellation Leo, having the form of a sickle.

Sidereal, (sī-dē're-al). [L. *sidus*, stars.] Relating to the stars. *S.-day:* the time occupied by the rotation of the Earth, as measured by the recurrence of the first point of Aries. *S.-time:* the angular distance of the first point of Aries and the meridian of Greenwich. *S.-year*=the time occupied by a complete revolution of the earth, as measured by the recurrence of some fixed star = 365 days 6 h 10 m nearly.

Siderite, (sid'er-īt) [Gk. *sideros*, iron.] A variety of chalybite, *q.v.*

Siderolites, (sid'er o-lits) [Gk. *sideros*, iron; *lithos*, stone.]=Meteorites, when chiefly of iron.

Sideroxylon, (sid-er-oks'i-lon). [Gk. *sideros*, iron; *xylon*, wood] An evergreen tree, belonging to Sapotaceæ; also called Iron-wood.

Sidus, (sī'dus). [The Latin word.] A star, or a group of stars.

Siebold's classification of animals—

- Vertebrata.
  - Mammalia.
  - Aves.
  - Reptilia.
    - Monopnoa.
      - Monimostylica.
      - Streptostylica.
    - Dipnoa.
  - Pisces.
    - Teleostei.
    - Ganoidei.
    - Elasmobranchii.
    - Marsipobranchii.
    - Leptocardii.
- Arthropoda.
  - Insecta.
  - Arachnida.
  - Crustacea
- Mollusks
  - Cephalopoda.
  - Cephalophora.
  - Acephala.
- Vermes.
  - Annulati.
  - Rotatorii
  - Turbellarii.
  - Helminthes.
- Zoophyta.
  - Echinodermata.
  - Acalephæ.
  - Polypi.
- Protozoa.
  - Rhizopoda.
  - Infusoria.

Siemen's unit of resistance=1 metre of pure mercury, 1 sq. millimetre in section, at 32° F =·956 Ohm.

Sienite=Syenite, *q v.*

Sighing. A prolonged inspiration.

Sight, (sit) [*Siht*, the A -S. word] Perception by means of the eye. *Long S.*=Presbytism. *Short S* =Myopy.

Sigillaria, (sij-il-lā'ri-a) [L. *sigilla*, small image] Coal-plants the bark and stems of which are found in carboniferous strata, with roots passing down into fire-clay beneath. Named from the shape of the leaf-scars

Sigmoid, (sig'moid). [Gk. *sigma*, the Greek S, *eidos*, form.] Curved like the letter S.

Signature, (sig'nā-tūr). In music, the marks at the beginning of each stave, showing how many of the notes are to be raised or lowered a semitone.

Signs of zodiac. The twelve divisions of the Ecliptic, each occupying 30°. *Northern:* Aries, Taurus, Gemini, Cancer, Leo, Virgo. *Southern:* Libra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces. *v* Zodiac.

Silaus, (si-lā'us).=Pepper-saxifrage: an herb belonging to Apiaceæ.

Silenaceæ, (sī-len-ā'se-ē). [Silene, *q.v*] A sub-division of Caryophyllaceæ.

Silenales, (sī-le-nā'lēz). [Silene, *q v.*] Plants, with monochlamydeous flowers and compound fruits, forming a division of Hypogynous Exogens.

Silene, (si lē'ne). [Classical.] Catchfly, *q.v.* *S acaulis*=Moss campion.

Silex, (sī'leks). [L. *silex*, flint] Impure silicic acid: flint

Silhouette, (sil'oo-et). [M. Silhouette] A profile likeness, usually black.

Silica, (sil'i-ka). [L. *silex*, flint]=SiO_2: silicic anhydride=Silicic dioxide=Silicic acid a crystalline substance, of which quartz, agate, amethyst, and chalcedony, are nearly pure specimens. *S. group of minerals:* includes quartz, chalcedony, and opal.

Silicates, (sil'i-kāts). [Silica, *q v.*]=Felspar, mica, hornblende, clays, &c.: natural mineral compounds of silicic acid with one or more metallic bases. *Ortho-S.*=Normal S.

Siliceous, (si-lish'us) [Silex, *q.v.*] Flinty. *S. rocks*: sandstones of flint-grains.

Silicic, (si-lis'ik) [Silica, *q.v.*] *S. acid*=SiO_2=S. anhydride: Silica: has feeble acid properties. *S. ether* = $(C_2H_5)SiO_3$ = Diethyl silicate. *S. tetra-fluoride*=Fluoride of silicon: a fuming gas, which acts on glass.

Silicides, (sil'i sīdz). [Silica, *q.v.*] Compounds of silicon with a metal.

Silicium, (si-lish'i-um). [Silica, *q.v.*]=Silicon, *q.v.*

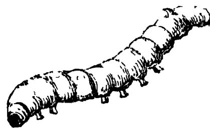
Silicon, (sil'i-kon). [Silica, *q.v.*]=Silicium=Si'''': the chief constituent of flint: a very abundant solid element. *S. group of minerals*=Silicon, titanium, tin, zirconium: tetrad elements.

Silicula, (si-lik'ū-la). [The Latin word.] A fruit, consisting of a frame and two valves, a short variety of the siliqua.

Siliqua, (sil'ik-wa). [The Latin word.] A long fruit, consisting of a frame, to which the seeds adhere, and two valves, which open one on either side.

Siliquosæ, (sil-i-kwō'sē). [Siliqua, *q.v.*]=Cruciferæ, *v.* Brassicaceæ.

Silk, (silk). [*Seole*, the A.-S. word.] A fine strong thread produced by the silkworm. *S. cotton*=Bombax ceiba. *S. moth*=Bombyx cinthia. *S. worm* = Bombyx mori.



Silkworm.

Sillago, (sil'la-go). *S. domina*=Lady-fish.

Sillimanite, (sil'li-man-īt). A mineral, chiefly silicate of aluminium.

Sillock, (sil'lok)=Merlangus carbonarius: also called Coal-fish.

Silurian, (si-lu'ri-an) [Silures, ancient inhabitants of Shropshire, &c.] A division of Primary rocks, between the Devonian and Cambrian, occupying nearly all Wales, and large tracts in N. England, Scotland, Ireland, and in Europe generally, also in America and Australia: characterised by abundance of brachiopod fossils.

Siluridæ, (si-lū'ri-dē). [Silurus, *q.v.*: Gk. *eidos*, form.] Sheat fishes: a family of fishes belonging to Malacopterygii.

Siluroid, (si-lu'roid) [Silurus, *q.v.*; Gk. *eidos*, form.] *S. fishes*=Siluridæ, *q.v.*

Silurus, (si-lu'rus). A large fish, the type of Siluridæ.

Silver, (sil'ver) [*Silfor*, the A.-S. word.]=Argentum=Ag'. one of the noble metals, a white, hard, malleable, tenacious, lustrous metal, valuable for its beauty, and as a good conductor of heat and electricity. *S. fir*=Abies picea. *S. fulminate*, *v.* Fulminates. *S. glance*=Sulphide of Silver=Ag_2S=Argentite, *q.v.* *S. group of minerals*: includes silver, kerate, argentite, stephanite, pyrargyrite, and proustite. *S.-haired monkey*=Grison. *S. tree*=Arbor Dianæ, *q.v.* *S. weed*=Potentilla anserina. *Horn S.*=Kerargyrite.

Nickel S.=German S.: an alloy of copper, nickel, and zinc.

Simaruba, (sim-a-rō'ba)=Quassia, *q.v.*: the type of Simarubaceæ.

Simarubaceæ, (sim-a-rō-bā'se-ē). [Simaruba, *q.v.*]=Quassiads: bitter tropical trees and shrubs, belonging to Rutales.

Simia, (sim'i-a). [The Latin name.]=Pithecus, *q.v.* *S. maura*=Negro monkey. *S. sylvanus*=Barbary ape.

Simiadæ, (si-mī'a-dē) [Simia, *q.v.*, Gk. *eidos*, form.] Apes and monkeys; a sub-division of Primates, *q.v.*

Simoom, (si-mōōm'). [Arabic, *samma*, pot.] A hot dry wind, blowing from April to June.

Simosaurus, (sim-ō-saw'rus). [Gk. *simos*, snub-nose, *saura*, lizard.] A genus of Plesiosauria, *q.v.* extinct marine reptiles.

Simple equation. One in which all the terms are of the first power only, as $x+9=8x-$[illegible]

Sinai. *Manna of S.*=Manna.

Sinapine, (sin'a-pin). [Sinapis, *q.v.*]=$C_{16}H_{23}NO_5$. An alkaline substance found in white mustard.

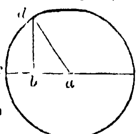
Sinapis, (si-nā'pis) [The Latin name.] Mustard: a plant belonging to Brassicaceæ, also considered as a sub-genus of Brassica, *q.v.* *S. alba*: white mustard. *S. arvensis*=Charlock.

Sinapoline, (sin-ap'ō-līn) [Sinapis, *q.v.*] A crystalline base, obtained from mustard.

Sincipital, (sin-sip'i-tal). [Sinciput, *q.v.*] Relating to the sinciput.

Sinciput, (sin'si-put). [L. *semi*, half, *caput*, head.] The upper part of the head.

Sine, (sīn). [L. *sinus*, curve.] In any right-angled triangle, the ratio of the side opposite an angle to the hypothenuse is the sine of that angle; *e.g.*, $\frac{db}{ad}$=Sine of angle *dab*; also $\frac{ba}{ad}$=Sine of angle *adb*. *S. compass*: a magnetised needle suspended at the centre of a vertical circuit, so arranged that when a current passes, and the coil and needle are in the same vertical plane, the sine of the angle through which the needle is deflected is the measure of the intensity of the current.



Sine.

Sinew, (sin'ū). [*Sinewe*, the A.-S. word.]=Tendon, *q.v.*

Singing. In liquids that are approaching the boiling point, caused by the rapid production of bubbles of vapour and their immediate recondensation by the cooler liquid above them.

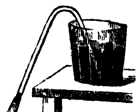
Singing-flame. A flame in a tube, over which the air in passing vibrates regularly, so as to produce musical sounds.

Sinistrorsal, (sin-is-tror'sal). [L. *sinister*, on the left hand; *orsus*, begun.]=Left-handed spiral.

Sioux, (sē'o) A tribe of N. American Indians.

Sipeira=Green-heart, *q.v.*

Siphon, (sī'fon). [Gk. *siphon*, tube.] A bent tube, having



Siphon

one arm longer than the other. *S. barometer:* one in which the tube is bent upwards.

Siphonaceæ, (sī-fon-ā'se-e). [Siphon, *q.v.*] A sub-division of Algæ, *q.v.*

Siphonia, (si-fō'ni-a). 1. A sponge-like zoophyte. 2. A plant belonging to Euphorbiaceæ. *S. elastica* = India-rubber tree: resembles ash-tree in appearance, found only in the lowlands of the river Amazon.

Siphonophora, (sī-fon-of'o-ra). [Gk. *siphon*, tube; *phoreo*, I carry.] A primary division of Hydrozoa.

Siphonops, (sī'fon-ops) [Gk. *siphon*, tube; *ops*, face.] A snake-like batrachian animal

Siphonostoma, (sī-fon-os'tō-ma). [Gk. *siphon*, tube, *stoma*, mouth.] A sub-division of suctorial crustacean animals

Siphonostomata, (sī-fon-o-stō'ma-ta). [Gk. *siphon*, tube] Carnivorous, marine, molluscous animals, having the shell prolonged, more or less, into a tube. *cf* Holostomata.

Sipping. *S insects*=Lepidoptera.

Sipunculidæ=Sipunculoidea, *q v.*

Sipunculoidea, (si-pun-kū-loi'de-a). [Sipunculus, *q.v*, Gk. *eidos*, form.] A sub-division of Echinodermata.

Sipunculus, (si-pun'kū-lus). [Gk. *siphon*, tube. A leech-like animal belonging to Annelida.

Siredon, (sī re'don) = Axolotl, *q.v.* *S. pisciforme*=Mexican axolotl.

Siren, (sī'ren). [Gk. *seiren*, mermaid] 1. An eel-like reptile resembling a fish, 2 or 3 feet long, with feet for fins 2.=Syren, *q.v.*

Sirenia, (sī-rē'ni-a). [Gk *seiren*, mermaid.] Siren, *q.v.*=Dugong, Manatee, &c.: herbaceous cetacean animals, of which the type is the dugong, from the name of which (Halicore= Sea maiden) comes the term sirenia.

Siricidæ, (sī-ris'i-dē). [Sirex, *q v.*] A family of insects, belonging to Hymenoptera, including the wasps.

Sirius, (sir'i-us). [The Latin name.]=Dog-star: in Canis Major, the brightest star in the heavens. once red, now green, discovered in 1862 to have a satellite star; is three times as bright as an ordinary sun star.

Sirocco, (si-rok'kō). [The Italian name] A hot moist wind, blowing from Africa over Sicily, &c.

Sisitote, (sis'i-tōt). A black and orange bird of Nicaragua.

Siskin, (sis'kin). [*Siska*, the Swedish name.] =Fringilla spinus: a small singing bird, also called Aberdevine.

Sison. A plant belonging to Apiaceæ. *S. amomum*=Hone-wort.

Sisymbrium, (si-sim'bri-um). [The Latin name]=Hedge-mustard: an herb, with yellow flower, belonging to Brassicaceæ. *S. alliaria*=Garlic mustard. *S. iris*=London rocket. *S officinale*=Bank-cress.

Sisyrinchium, (sis-i-ring'ki-um). [Gk. *sisyra*, hairy.] A plant belonging to Iridaceæ.

Sitta, (sit'ta). [The Latin name.] A bird belonging to Certhidæ, a family of Insessores. *S. Europæa*=Nuthatch.

Sium, (sī'um). Water parsnips: a plant belonging to Apiaceæ.

Sivatherium, (siv-a-thē'ri-um). [*Siva*, a Hindoo deity, Gk. *therion*, beast] A large four-horned antelope, known by fossil remains found in Pliocene rocks of Hindostan.

Six's thermometer. A self-registering thermometer. *v.* Miller-Casella Thermometer.

Sixth. In music, the interval between any note and the fifth note above it.

Size, (sīz) [W. *syth*, glue] A variety of gelatin obtained from skins; used as glue and in painting.

Skate, (skāt). [L. *squatina*] = Raia batis: a fish belonging to Raidæ.


Skate

Skeat, (skēt). [The Arabic name.] A star=β Pegasi.

Skeleton, (skel'e-ton). [Gk. *skeleton*, a dried body] 1. The bones and cartilages forming the hard portion and framework of a vertebrate body 2 Skin hardened into bony plates.

Skimmer. A bird=Rynchops nigra.

Skin, (skin). [*Scinn*, the A-S. word.] Also called Integument: a tough membrane covering every part of the body; divided into two layers, called Dermis and Epidermis.

Skin animals. Oken's term for worms. *S. eaters*=Dermestidæ, *q.v.* *S. plants*=Dermatophytes=Feathers.

Skink, (skink)=Scincus, *q.v.*

Skua gull=Lestris cataractes: a bird belonging to Laridæ, nearly extinct.

Skull, (skul) Four vertebræ, greatly modified, forming a bony case which encloses the brain. *S cap*=Scutellaria, *q v.*

Skulpin, (skul'pin)=Callionymus lyra: a fish belonging to Gobiidæ.

Skunk=Mephitis, *q.v.*

Sky. *S lark*=Alauda, *q v.*

Slag, (slag). [*Slagg*, the Swedish word.] 1. The dross left in the process of refining metals. 2. Vitrified cinders. *v.* Scoria.


Skunk

Slaked. *S. lime*=Hydrate of calcium: a light powder, formed by the addition of water to lime.

Slate, (slāt). [*Sclate*, the O.-E word.] A clayey rock, which splits into thin leaves. Generally, any rock which has a laminar structure.

Slaters. Small crustacean animals belonging to Isopoda. *Box S* = Idothea. *Rock S.*= Ligia. *Water S.*=Aselli.

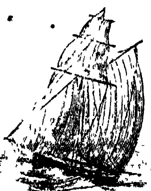
Sleet, (slēt). [*Sliht*, the A.-S. word.] Snow flakes that have fallen through moist air.

Slickensides, (slik'en-sīdz). The smooth surfaces of a fissure, polished by friction.

Slide-rule. A mathematical instrument, one part of which slides upon the other, by which problems in the elementary rules of arithmetic can be solved.

Sliver, (slī'ver). [A.-S. *slifan*, to split] A long thin piece of anything: especially of cotton or wool when being spun.

Sloop, (sloop) [*Sloep*, the Dutch word.] A ship having one mast, and a large mainsail fastened below to a long boom


Sloop.

Sloe, (slō) [*Sla*, the A.-S. name.]=Prunus spinosa: a variety of the plum.

Slot, (slot). A groove or slit, especially in machinery.

Sloth, (slōth). [A.-S. *sleadh*, slow.]=Bradypus, *q.v.*


Sloth

Slovak. A European people.

Slow. *S. lemurs*: animals belonging to Nycticebinae. *S. worm*=Blind-worm, *q.v.*

Slug. A snail-like animal belonging to Pulmogasteropoda, *q.v.* *v.* Limacidae. *Sea S.*=Opisthobranchiata, *q.v.*, animals belonging to Gasteropoda.

Small. *S intestines*=Duodenum, jejunum, and ileum, *q v*: connect the stomach with the large intestines *S circles* of a sphere. one the plane of which does not pass through the centre *S.-pox*: an eruptive contagious febrile phase of disease, also called Variola.

Smalt, (smawlt) [*Schmalte*, the German word.] A blue glass coloured by cobalt.

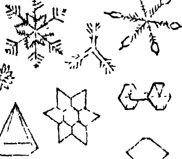
Smaltite, (smawlt'it). [Smalt, *q v*]=Smaltine. a mineral of the cobalt group, chiefly arsenide of cobalt, $CoAs_2$

Smaragdite, (smar'ag-dit). [L *smaragdus*, emerald] A variety of augite, including the emerald.

Smee's battery. [Dr. Smee] A galvanic battery consisting of plates of zinc and platinum in sulphuric acid: the platinum is covered with minute pieces of platinum, so as to present a roughened surface, from which the evolved hydrogen readily escapes

Smell, (smel). The sensation produced by the excitement of the mucous membrane of the nasal cavities, in which terminate the olfactory nerves.

Smelt, (smelt). [A.-S. *smel*, small] A small fish, belonging to Salmonidæ.


Smelt.

Smelting, (smelt'ing) [*Smelten*, the Dutch word]=Reduction: the removal of the oxygen from metallic oxides, usually by means of carbon and certain fluxes, so as to leave the metal free

Smilaceæ, (smi-lā'se-ē). [Smilax, *q v*]=Sarsaparillas: herbs, sometimes with fleshy tubers, belonging to Dictyogens.

Smilax, (smi laks). [The Latin name.] Sarsaparilla: an evergreen plant, the type of Smilaceæ.

Smithsonite=Electric-calamine: a mineral of the zinc group, crystallising in rhombs, composed of silicate and hydrate of zinc.

Smoke, (smōk). [*Smocca*, the A.-S word.] The thick vapour arising from some burning substance. *S. ball*: projectiles which evolve dense smoke, used in mines &c., for suffocating

Smut=Ergot, *q.v.*

Smyrnium, (smer'ni-um). [*Smurnion*, the Greek name] A plant belonging to Apiaceæ; also called Alexanders.

Snail, (snāl). [*Snægel*, the A.-S. word.] 1. =Helix, *q.v.* *River S*=Paludina, *q v.* *Sea S.*=Liparis 2. A wheel in a clock-work train, especially in the striking portion of the machinery of a clock, named from its shape.

Snake, (snāk). [*Snaca*, the A.-S. word.]=Anguis=Natrix *v.* Ophidia *Rattle S.*=Crotalus horridus. *Ringed S.*=Coluber natrix. *S. fish*=Cepola, a fish belonging to Tæmoidei. *S root*=S weed=Polygonum bistorta. *S. wood* Ophioxylon, *q.v.* *S's head*=Fritillaria meleagris *S's tongue*=Ophioglossum.


Snake

Snapdragon=Antirrhinum, *q.v.*, named from the shape of the flower.

Snatchers=Raptoria, *q.v.*

Sneeze. *S. wort*=Achillea ptarmica.

Snipe, (snīp). [*Schnepfe*, the German name.] A bird belonging to Scolopacidæ, *q.v.* *Painted S.*=Rhynchæa *S. fish*=Centriscus scolopax; named from its snout.

Snow, (snō) [*Snaw*, the A -S. word.] Frozen rain, crystallising in a great variety of forms. *S ball tree*=Viburnum opulus. *S. berry*=Chiococca, a plant belonging to Cinchonaceæ. *S. bunting*=Plectrophanes nivalis *S. drop*=Galanthus. *S. flake*=Leucojum: a plant belonging to Amaryllidaceæ. *S. goose*=Anser hyperboreus *S. line*: the height, at any given place, above which the snow does not melt, and below which it melts in summer. *Green and Red S*: due to presence of a microscopic organism, called Protococcus nivalis.

Snow-crystals.

Snowdon. A mountain peak in the Moon.

Snuff, (snuf). [*Schnuppe*, the German word] Tobacco, powdered, which has undergone a long fermentation, by which its nicotylia is destroyed.

Soap, (sōp). [*Sape*, the A.-S. word.] A mixture of potash or soda with stearine, margarine, oleine, &c.; used in washing. *Herd*

S.: that of which soda is the base. *Soft S.*: that of which potash is the base *S. berry*= Sapindus. *S. stone* = Steatite. *S. wort*= Saponaria. *S. worts*=Sapindaceæ

Sobieski, Shield of=Scutum Sobieski: a small constellation.

Soda, (sō'da). [The German word]=Na_2O= Sodic oxide: a solid compound of sodium and oxygen which absorbs water and becomes caustic soda, which is used in soap making. *S. alum:* a mineral, chiefly hydrated silicate of aluminium. *S. water:* water impregnated with carbonic acid.

Sodic, (sō'dik) [Sodium, *q v.*] *S. nitre*= Cubic nitre. *S. oxide*=Soda.

Sodium, (sō'di-um). [The Latin form of soda.] =Natrium=Na: one of the alkali metals: a soft bluish-white metal, lighter than water, with a great affinity for oxygen, obtained chiefly from common salt. *S. alcohol*=Ethylate of sodium

Soffit, (sof'fit). [*Soffita*, the Italian word.] The under part of a vault, arch, or cornice.

Soft. *S. grass*=Holcus mollis. *S. water*= rain water=Pure water, containing little, if any, mineral substance in solution.

Sol. 1. Sun, *q. v.* 2. A note in vocal music

Solan-goose, (sō'lan). [*Sula*, the Icelandic name]=Sula alba=Gannet: a bird belonging to Pelecanidæ.

Solanaceæ, (sō-la-nā'se-ē). [Solanum, *q v.*] =Nightshades: potatoes, tomato, &c.; herbs and shrubs, often poisonous, with regular flowers, belonging to Solanales.

Solanales, (sō-la-nā'lēz) [Solanum, *q.v.*] Plants with dichlamydeous monopetalous flowers, forming a division of Perigynous Exogens.

Solano, (sō-lā'nō). [The Spanish name] A S E wind, of a hot and dusty character, known in Spain, and coming from Africa

Solanum, (sō-lā'num). [The Latin name]= Nightshade. an herb or shrub, the type of Solanaceæ. *S. lycopersicum* = Tomato. *S. tuberosum*=Potato.

Solar, (sō'lar). [L *sol*, Sun.] Related to the Sun. *S. cycle*=28 years, after which the days of the week correspond to the same days of the month. *S. day:* the time of one revolution of the Earth round the Sun. *S. eclipse*: when the Moon comes between the Earth and the Sun. *S. microscope:* used in a dark room, and illuminated by sunlight, so that the image of the observed object can be thrown on a screen. *S. plexus:* one of the ganglions of the sympathetic nerve-system, placed behind the stomach. *S. prominences:* red flame-like masses, seen in the atmosphere of the Sun at a total solar eclipse. *S. spectrum:* a band of colour, passing from red, through orange, yellow, green, blue, and indigo, to violet, which is seen when a single ray of sunlight is passed through a prism. *S. system:* the Sun planets and their satellites, includes the Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, with the moons, &c., belonging to these, and the Asteroids.

Solders, (sol'derz). [L. *solidus*, solid.] Alloys used to unite metals.

Soldiers=White ants, *q v.*

Soldiers and sailors=Telephoridæ, *q v.*

Sole, (sōl). [*Solea*, the Latin name.]=Solea: a flat fish, belonging to Pleuronectes.

Sole

Solenhofen stone. [S. in Bavaria.] Used for lithography: a subdivision of Middle Oolite, remarkable for its numerous fossils.

Solenodon, (sō-lē'nō-don). [Gk. *solen*, tube; *odous*, tooth] An insectivorous animal, somewhat resembling the shrew.

Solenoid. [Gk. *solen*, tube.]=Sphondyloid: a piece of copper wire arranged in a spiral round part of itself, with a galvanic current passing through it; it then acts in many respects as a magnet.

Soles, (sōlz). *v.* Sole.

Sol-fa, (sol'fä). [Sol and Fa.] *v.* Solmisation.

Solid *S. angle:* one formed by the meeting of three or more plane angles at one point. *S. geometry:* the geometry of solids

Solidago, (sol-i-da'go). A plant belonging to Asteraceæ. *S. virgaurea*=Golden rod.

Solidungula, (sol-id-ung'ū-la). [L. *solidus*, solid; *ungula*, hoof.]=Horse, zebra, ass, &c: a sub-division of Mammalia.

Solifrigæ. One of Hœven's sub-divisions of Arachnids.

Solitary ant = Mutillidæ: whose larvæ are parasitic on humble-bees.

Solmisation, (sol-mi-zā'shun). [Sol and Mi.] =Sol-faing: the application of the sounds Do Re Mi Fa Sol La Si to the seven notes of the musical scale.

Solstice, (sol'stis). [L. *sol*, Sun; *sto*, I stand.] The two periods in the year when the Sun attains its greatest declination are so called. *Summer S.:* about June 22, in N. hemisphere. *Winter S.:* about December 22, in N. hemisphere.

Solution, (sō-lū'shun). [L. *solvo*, I loosen] A liquid containing a solid in small particles, generally diffused. *S. of triangles*: the determination of the numerical values of the sides and the angles.

Solvents, (sol'vents). [L. *solvo*, I loosen.] Water, hydrochloric acid, nitric acid, aqua regia, &c.: used for purposes of solution.

Somatada. A sub-division of Infusoria, by Siebold

Somateria, (sō-ma-tē'ri-a). A bird belonging to Anatidæ. *S. mollissima*=Eider-duck

Somatic, (sō-mat'ik) [Gk. *soma*, body.]=Bodily.

Somite, (sō'mīt). [Gk *soma*, body.] A segment of an articulate animal.

Sommering. *Yellow spot of S.:* in eye. *Foramen of S.:* in eye.

Somnii, (som'ni-ī). *Palus S.:* a plain on the Moon's surface, of a ruddy tint.

Sonchus, (song'kus). An herb, with milky juice, belonging to Asteraceæ. *S. oleraceus* =Sow-thistle.

Song-thrush=Turdus musicus: builds a basin-formed nest of clay and wood.

Sonometer, (son-om'e-ter) [L. *sonus*, sound; Gk. *metron*, measure.] An instrument, consisting of one tightly stretched string or wire, for measuring the transverse vibrations of strings, &c.

Soot, (soot). [*Sot*, the A.-S. word] The unburnt remains of fuel usually black, and of complex composition.

Sophrosyne, (so-fros'i-nē). [Classical.] A Minor Planet, No. 134, discovered in 1873.

Sorbic acid, (sor'bik). [Sorbus, *q. v.*]=$C_6H_8O_2$ a crystalline acid substance obtained from sorbus berries.

Sorbin, (sor'bin). [Sorbus, *q.v.*]=$C_6H_{12}O_6$: a variety of sugar, prepared from fruit of *Sorbus aucuparia*.

Sorbus, (sor'bus). [The Latin name] A subdivision of Pyrus, *q. v.*; also called Service-tree.

Sorex, (sō'reks). [The Latin name.]=Shrew: the type of Soricidæ, *q. v.*

Sorghum, (sor'gum). A grass-plant, belonging to Gramminaceæ; also called Andropogon sorghum and Indian millet.

Soricidæ, (sō-ris'i-dē) [Sorex, *q. v.*; Gk *eidos*, form.]=Shrews: small mice-like animals belonging to Insectivora.

Sorrel, (sor'rel). [A.-S. *sur*, sour.]=Rumex acetosum. *Mountain S.*=Oxyria. *Wood S.* =Oxalis.

Sorus, (sō'rus). [Gk. *soros*, heap] An aggregation of spore cases, in ferns, &c.

Soubresauts=Jumping ebullition.

Sound, (sound) [*Sond*, the O E word] The perception, by means of the ear, of the vibration of elastic bodies when these vibrations are more than 16, and fewer than 36,000, double vibrations per second. *Prolongation of S.*=Resonance. *S. figures*: regular figures, formed by fine sand when strewn on vibrating plates *S. wave*, *v.* Wave.

Sounding-lead. A weight let down into water to measure the depth by the length of the rope drawn after it as it goes to the bottom. *v.* Deep-sea sounding.

Sour-sop=Anona muricata.

Southern fish=Piscis Australis, *q. v.*

Southern-wood=Artemisia abrotonum

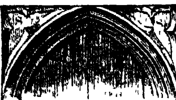
Sow, (sow). [*Sugu*, the A.-S. name.] The female of the hog, *v.* Sus. *S. bread*=Cyclamen. *S thistle*=Sonchus oleraceus.

Spadix, (spā'diks). [L *spadix*, palm branch and fruit.] A variety of the spike form of inflorescence. *v.* Spike.

Spalacotherium, (spal-a-ko-thē'ri-um) [Gk. *spalax*, mole, *therion*, beast] An insectivorous marsupial animal, known only by fossil remains found in Purbeck rocks.

Spalax, (spā'laks). [Gk. *spalax*, mole]=Blind rat: a rat-like animal belonging to Muridæ; having a large head, no eyes, and very short legs.

Spandrels, (span'drelz) [Span] Triangular spaces on each side of an arch, or between two arches.


S S, Spandrels.

Spaniel, (span'yel). [*Espaniel*, the old French name.] A variety of the dog, used in sporting, and noted for its sagacity and beauty.


Spaniel (King Charles).

Spanish. *S. fly*=Cantharis. *S moss* =Lycopodium denticulatum.

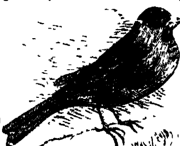
Spar, (spar). [*Spath*, the German word] A general term for crystalline minerals. *v.* Iceland spar, Rhomb spar, Fluor spar, &c.

Sparganium, (spar-gā'ni-um). [Gk. *sparganon*, band]=Reed-bur: a plant belonging to Typhaceæ, named from the form of the leaf.

Sparidæ, (spa'ri-dē). [Sparus, *q v*, Gk. *eidos*, form] A family of fishes belonging to Acanthopterygii.

Spark, (spárk). [*Spearca*, the A.-S. word] A particle of incandescent matter. *Electric S.*, *v.* Electric spark.

Sparrow, (spar'ō). [*Sparwe*, the O. E. name] =Passer domesticus *S. hawk* = Accipiter nisus.


Sparrow

Sparry iron ore A crystalline variety of chalybite, *q v.*

Sparteia, (spár'ti-a). [*Spartium*, a plant.] =$C_{15}H_{26}N_2$: a natural organic base obtained from Spartium, *q v.*

Spartium, (spár'shi-um). [The Latin name.] =Cytisus=Broom-plant.

Sparus, (spā'rus) [The Latin name] A fish, the type of Sparidæ, *q. v.* *S pagrus*=Becker.

Spatangoid, (spa-tang'oid) [*Spatangus*, the typical genus, Gk. *eidos*, form] *S. sea-urchins*: a sub-division of Echinidæ

Spatangus, (spa-tang'us) Heart-urchin: a radiate animal, belonging to Echinidæ.

Spathe, (spaTH). [*Spatha*, the Latin word.] A sheath-like involucrum.

Spathic, (spath'ic). [Ger *spath*, spar.] Spar-like: crystalline and foliated.

Spatula, (spat'ū-la) [L. *spatula*, spoon.]= Shoveller=Anas clypeata: a variety of the duck, named from the form of his bill.

Spatularia, (spat-ū-lā'ri-a) [L. *spatula*, spoon.] A sturgeon-like fish, named from its broad snout.

Spawn, (spawn). 1. Young stem of a fungus. 2 Eggs of fish, frogs, &c

Speaking trumpet. An instrument for carrying vocal sounds to a great distance.

Spear. *S. mint*=Mentha viridis. *S.-wort*= Ranunculus lingua.

Species, (spē'shi-ēz). [The Latin name] In biology: forms that differ by characters never varying in the same group, and never found connected by intermediate states; differs from varieties only in greater distinctness and less fluctuation.

Specific, (spe-sif'ik). [Species, *q v.*] Peculiar: belonging only to given species or kind. *S gravity*: the weight of a solid or liquid body

as compared with the weight of distilled water; or of a gas as compared with the weight of hydrogen. *S. gravity flask:* used to determine the specific gravity of a powder or of a liquid. *S heat:* the quantity of heat required to raise a substance through any given range of temperature, as compared with the quantity required to do the same for water. *v.* Dulong and Petit's Law.

Spectacle. • *S snake*=Naia=Coluber naja.

Spectra, (spek'tra) [Spectrum, *q.v.*] Plural of spectrum, *q.v.*

Spectral, (spek'tral). *S. analysis:* based on the lines in a spectrum, *q.v.*

Spectrometer, (spek-trom e-ter). [Spectrum, *q.v*, Gk. *metron*, measure.] • For mapping out a spectrum, attached to a spectroscope.

Spectroscope. (spek'tro-skōp). [Spectrum, *q v.*, Gk. *skopeo*, I view.] An instrument for examination of spectra, and the measurement of the lines present, of great value in chemical analysis.

Spectrum, (spek'trum). [The Latin word.] A beam of light passing through the colours red, orange, yellow, green, blue, indigo, and violet, caused by the prismatic refraction of white light, and its dispersion on a screen. The primary colours of the spectrum are said to be red, yellow, and blue, the other colours being mixtures of two or more of these. Each spectrum, of solar, stellar, or artificial light, is crossed by innumerable black lines: and as each chemical elementary substance has always the same lines in the same relative positions, the spectrum of an incandescent substance will show, by the lines, what is its chemical composition.

Specularia, (spek-ū-lā'ri-a) A plant belonging to Campanulaceæ; also considered as a sub-genus of Campanula.

Specular iron, (spek'ū-lar). [Speculum, *q.v.*] A variety of hæmatite.

Speculum, (spek'ū-lum). [The Latin word] A mirror, especially of metal; used in telescopes and other optical instruments. *S. metal:* an alloy of tin and copper.

Speed pullies. Pullies used to transfer motion from one part of a machine to another, with increase or diminution of velocity.

Speedwell=Veronica, *q v.*

Speeton clay, (spē'ton). [S. in Yorkshire] Beds, with numerous fossils, belonging to Neocomian series

Speiss, (spis). [Ger. *speise*, mixed metals.] =Impure arsenic sulphide of nickel.

Spelt, (spelt). [The German name]=Triticum spelter: a corn-plant; also called German wheat.

Spelter, (spel'ter) [*Spelter*, the German word.] =Unrefined zinc.

Spergula, (sper gū-la). [L. *spargo*, I scatter.] =Spurrey: an herb belonging to Illecebraceæ; named from the dispersion of the seeds.

Spergularia, (sper-gū-lā'ri-a). [Spergulo, *q v*] =Sand-wort spurrey: an herb belonging to Carophyllaceæ

Sperm-oil=Liquid fat of spermaceti whale.

Spermaceti, (sper'ma-se-ti). [Gk. *sperma*, seed; *cetus*, whale.]=$C_{32}H_{64}O_2$=Cetin: solid crystalline fat, from brain of spermaceti whale. *S. whale*=Physeter macrocephalus.

Spermatia, (sper-mā'shi-a). [Gk *sperma*, seed.] Small rod-like spores, in fungi; probably barren basidia, *q.v.*

Spermatophores, (sper'ma-tō-fōrz). [Gk. *sperma*, seed; *phoreo*, I bear.] Worm-like filaments, covering the eggs of Cephalopoda.

Spermatozoa, (sper-ma-to-zō'a). [Gk. *sperma*, seed; *zoon*, animal.]=Sperm corpuscles in animals. microscopic organisms found in the sperm cells of animals.

Spermatozoon, (sper-ma-to-zō'on). [Gk. *sperma*, seed, *zoon*, animal.] Singular of Spermatozoa, *q.v.*

Spermophila, (sper-mof'i-la). [Gk. *sperma*, seed, *phileo*, I love.] A bird belonging to Fringillidæ.

Spermophilus, (sper-mof'i-lus). [Gk. *sperma*, seed, *phileo*, I love.]=Arctomys, *q v.*

Spermophore, (sper'mo-fōr) [Gk *sperma*, seed: *phoreo*, I bear.] The portion of a fruit to which the seeds are attached

Sphagnaceæ, (sfag-nā'se-ē). [Sphagnum, *q.v.*] A primary division of mosses, called Bog-moss.

Sphagnum, (sfag'num). [*Sphagnos*, the Greek name] The only genus of Sphagnaceæ.

Spheniscus, (sfe-nis'kus). [Gk. *sphen*, wedge.] =Penguin: a bird, with very short wings, belonging to Natatores.

Sphenodon, (sfē'no-don) [Gk. *sphen*, wedge; *odous*, tooth]. A reptile, known only by fossil remains.

Sphenoid, (sfē'noid). [Gk. *sphen*, wedge; *eidos*, form] Wedge-like. *S. bone* a large bone, of irregular shape, in the skull.

Sphenophylla, (sfē-nō-fil'la). [Gk. *sphen*, wedge, *phyllon*, leaf] Plants, allied to Lycopods, known by fossil remains, found in coal.

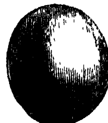
Sphenopteris, (sfē-nop'ter-is). [Gk. *sphen*, wedge; *pteris*, fern.] Fossil fronds of tree ferns, found in coal.

Sphere, (sfēr) [*Sphæra*, the Latin word.]= Globe: a solid body, of which all points of the surface is equidistant from the centre.

Spherical, (sfer'i-kal). [Sphere, *q.v.*] Related to a sphere. *S aberration*, *v.* Aberration.

Spherograph, (sfer'ō-graf). [Sphere, *q v*. Gk. *grapho*, I write] An instrument, used in navigation, for the construction and calculation of spherical triangles.

Spheroid, (sfē'roid) [Sphere, *q.v.*; Gk. *eidos*, form.] A solid body, the form of which is nearly spherical.


Spheriod

Spheroidal, (sfer-oid'al). [Sphere, *q.v.*, Gk *eidos*, form] *S. condition*, of water or any volatile liquid when thrown on a highly heated metal surface. in flattened globules, surrounded by their own vapour, so as not to be in contact with the metal.

Spherostilbnite, (sfē-rō-stilb'nit) [Sphere, *q v.*; Gk. *stilbe*, lustre.] A lustrous mineral,

chiefly hydrated silicate of aluminium, named from occurring in globular masses.

Sphex, (sfeks). [Gk. *sphex*, wasp.] An insect belonging to Hymenoptera.

Sphincter, (sfingk'ter). [Gk. *sphigkter*, clasp.] *S. muscles:* those which contract and close apertures, such as the mouth, eyes, &c.

Sphingidæ, (sfin'ji-dē). [Sphinx, *q.v.*; Gk. *eidos*, form.]=Sphinx-moths: a family of crepuscular insects, belonging to Lepidoptera.

Sphinx, (sfingks). [The Latin name.] Hornet moth, &c., the type of Sphingidæ, *q.v.* *S. atropos:* death's head hawk-moth.

Sphygmograph, (sfig'mō-graf). [Gk. *sphygmos*, pulse, *grapho*, I write.] An instrument to write pulse waves, on smoked glass or paper, so as to show the character of the pulse.

Sphyræna, (sfi-rē'na). A fish belonging to Percidæ.

Spica, (spī'ka). [L. *spica*, spike.]=*a* Virginis, the chief star in the constellation Virgo.

Spicula, (spik'ū-la). [L. *spicula*, small thorn.] Any small hard organic substance having a pointed form.

Spider, (spī'der). [Spinner.] Epeira diadema: an animal belonging to Araneida, *q.v.*, also called Tegeneria domestica. *S. crab*=Maia. *S. mites*=Gamasidæ. *S. monkey*=Ateles. *S. orchis*=Ophrys aranoifera. *S. worts*=Commelynaceæ.

Spiders, (spī'derz). [Spider, *q.v.*]=Araneida, *q.v.* *Sea S.*=Pantopoda.

Spiegeleisen, (spē-je-lī'sen). [The German name.]=Mirror iron: a hard fusible variety of cast iron containing a large percentage of manganese.

Spigelia, (spī-jē'li-a). [Spigelius, a Belgian botanist.] Worm-grass: a plant, the type of Spigeliaceæ.

Spigeliaceæ, (spī-jel-i-ā'se-ē). [Spigelia, *q.v.*] A family of American plants—Loganiaceæ, *q.v.*

Spigelian. *S. lobe:* in the liver.

Spignel=Meum, *q.v.*

Spike, (spīk). [L. *spica*, ear of corn.] *S. horn buck*=Cervus Virginianus, has a very sharp horn. *S. inflorescence:* in which the flowers are sessile, on a common axis, as in grasses.

Spikenard = Nardostachys jatamansi, *q.v.* *Ploughman's S.*=Inula conyza.

Spinach, (spin'āj)=Spinacia, *q.v.*

Spinacia, (spi-nā'shi-a). [The Latin name.] A plant belonging to Chenopodiaceæ. *S. oleracea*=Garden spinach.

Spinal, (spīn'al). [L. *spina*, thorn.] Related to the spine. *S. cord:* of soft grey substance, extending from the brain to the lumbar region. *S. nerves*, branching from the spinal cord.

Spinax, (spī'naks). A fish belonging to Squalidæ, also called Piked dog-fish.

Spindle, (spin'dl). [*Spindle*, the A.-S. word.] =Shaft, especially when of small size. *S. tree*=Euonymus, *q.v.* *S. trees*=Celastraceæ, *q.v.*

Spine, (spīn). [L. *spina*, thorn). 1.=Backbone, *q.v.* 2. Sharp projections, as of the stems of some plants.

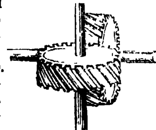
Spinel, (spi-nel). [*Spinelle*, the French word.] A mineral, crystallising in cubes, chiefly aluminate of magnesia, the purer varieties of which are valuable for ornament.

Spinning. The process by which the short fibres of wool, cotton, flax, &c., are twisted into long threads.

Spiracle, (spī'ra-kl). [*Spiraculum*, the Latin word.] Side openings of the tracheal tubes in insects.

Spiræa, (spī-rē'a). [Gk. *speira*, cord.] A plant belonging to Rosaceæ. *S. ulmaria*=Meadow-sweet. *Oil of S.*=Salicyl hydride.

Spiral, (spī'ral). [Spire, *q.v.*] A curve which winds, screw-like, round an axis. *S. wheel:* one of which the teeth are inclined to the axis.


Spiral-wheel.

Spiranthes, (spi-ran'thēz). [Gk. *speira*, twist, *anthos*, flower.]=Lady's tresses: a plant belonging to Orchidaceæ.

Spire, (spīr). [*Spira*, the Latin word.] The termination of a tower, when tapering.

Spirifer, (spī'ri-fer). [L. *spira*, coil; *fero*, I bear.] A genus of Brachiopoda, found in Devonian, Carboniferous, and Permian rocks.

Spirit, (spi'rit). [L. *spiritus*, breath of life.] 1.=Alcohol. 2. A general term for essence, and for any substance capable of being purified by distillation. *S. level:* a tube nearly filled with spirit, the remaining space being filled by a small quantity of air, which is at the centre of the top, when the tube is horizontal. *Wood S.*=Methyl alcohol.

Spirting cucumber=Elaterium agreste=Momordica elaterium.

Spittle. A secretion of the salivary glands.

Splachnum, (splak'num). [Gk. *splachnon*, moss.]=Gland-moss: a plant belonging to Mosses.

Splanchna- (splangk'na). [Gk. *splagchnon*, entrail.] Relating to the alimentary canal.

Spleen, (splēn). [*Splen*, the Latin name.]=Milt, a kidney-shaped red body near the stomach, the use of which is, possibly, the production of the white corpuscles of the blood.

Spleen-wort=Asplenium, *q.v.*

Splenic, (splen'ik). [Spleen, *q.v.*] Related to the spleen. *S. artery:* supplies the spleen with blood direct from the aorta. *S. vein:* conveys the blood from the spleen to the liver, through the vena portæ.

Split mosses=Andreæaceæ, *q.v.*

Spodumene, (spod'ū-mēn). [Gk. *spodos*, ashes.] A mineral, chiefly silicate of aluminium.

Sponge, (spunj). [Spongia, *q.v.*] *v.* Spongida. *S. crab*=Dromia.

Spongia, (spun'ji-a). [The Latin name.] The typical genus of Spongida, *q.v.*

Spongiaria, (spun-ji-ā'ri-a). [Spongia, *q.v.*] Used for sponges by Milne-Edwards.

Spongida, (spun'ji-da). [Gk. *spoggos*, sponge.] Spongiadæ=Sponges: a division of Protozoa; gelatinous, marine and fresh-water, animals, traversed by numerous canals, and usually extended over fibrous siliceous skeletons, divided into horny, flinty, and limy sponges.

Spongilla, (spun-jil'la). [Spongia, *q.v.*]=

Common fresh-water sponge: the type of Spongida, *q v.*

Spongioles, (spun'ji-ōlz). [Sponge, *q.v.*] The extremities of the fibres of a plant-root.

Spongy, (spun'ji). [Sponge, *q v.*] *S. platinum:* platinum in a soft porous state, occurring in the course of its extraction from the ore.

Spontaneous, (spon-tā'nē-us). [L. *sponte*, voluntarily.] *S combustion:* as of phosphorus in sunlight, when no artificial heat is applied. *S. generation* = Archebiosis and Heterogenesis, *q v.*

Spoon *S. bill*=Platalea leucorodia, *q.v.*

Spoor, (spoor). [*Spor*, the Dutch word.] = Tracks, as of game


Spoonbill.

Sporadic, (spō-rad'ik). [Gk *sporadikos*, scattered.] Scattered; occurring in only a few instances, or places.

Sporangia, (spō-ran'ji-a). [Gk. *spora*, seed; *aggos*, vessel] Spore-cases: on tips of fine threads, in Physomycetes, found fossil in coal.

Sporangium, (spō-ran'ji-um). [Gk. *spora*, seed; *aggos*, vessel.] Singular of sporangia, *q.v.*

Spores, (spōrz). [Gk. *spora*, seed.] Naked embryos: reproductive bodies of fungi: germ cells not produced in cysts. *cf.* Sporidia.

Sporidia, (spō-rid'i-a). [Gk. *spora*, seed, *eidos*, form.] Reproductive bodies in fungi: germ cells produced in cells or cysts. *cf.* Spores.

Sporophores, (spō'rō-fōrz) [Gk *spora*, seed, *phoreo*, I bear.]=Basidia: stalks supporting spores, in ferns.

Sporting plants. Those which produce a bud of a character different from the other buds.

Sporules, (spō'rūlz) [Spore, *q.v.*]=Spores, *q v.*

Sprat, (sprat). [*Sprot*, the O E. name]= Clupea sprattus: a small fish belonging to Clupeidæ.

Sprengel's air pump, by which the air, diffused through a barometer tube, down which mercury drops at intervals, is carried out by the descending mercury, until a vacuum is produced

Spring. 1. The earliest of the four Seasons, *q.v.* 2. Rain water, which having percolated some of the earth's strata, comes again to the surface, at some lower point. 3. An elastic substance or body, used as a mechanical agent. *Mineral S.:* spring-water impregnated with mineral matter. *S.-bok* = Antidorcas melampus: a S. African antelope. *S. tides*, *v.* Tides.

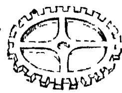

Spring-bok.

Spruce fir, (sproos). [The O. E. name.] A tree belonging to Abies, *q v*

Spurge, (sperj). [*Epurge*, the French name.] = Euphorbia, *q.v* *S hawk-moth* = Deilephyla euphorbia. *S.laurel*=Daphne laureola. *S.-worts*=Euphorbiaceæ.

Spur-valerian = Centranthus: an herb belonging to Valerianaceæ.

Spur-wheel. A wheel having teeth projecting radially from the circumference.


Spur wheel.

Spurry=Spergula, *q.v.* *Knotted S.* = Sagina nodosa. *Sandwort S.*=Spergularia.

Squalidæ, (skwā'li-dē). [Squalus, *q v*; Gk. *eidos*, form.]=Sharks: a family of fishes belonging to Elasmobranchia

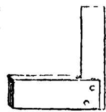
Squalus, (skwā'lus). [The Latin name]= The typical genus of Squalidæ.

Squama, (skwā'ma). [L. *squama*, fish scale.] A general term for any scale-like process in a plant or animal.

Squamifora, (skwā-mif'e-ra). [Squama, *q v*; *fero*, I bear.] De Blainville's term for reptiles.

Squamosal, (skwā-mō'sal). [L. *squama*, scale.] A membranous part of the temporal bone, overlapping the parietal bone *S. suture:* by overlapping of bevelled margins

Square, (skwār). 1. A figure formed by four equal straight lines, all the angles being right angles 2 A carpenter's tool, for drawing lines at right angles to others. 3. The product of a number multiplied by itself = 2nd power. *S root:* the number which when multiplied by itself becomes any given number, is the square root of that number 5 is the square root of 25, written $5=\sqrt{25}$. *S. stern*=Transom stern.


Square (carpenter's).

Squaring the circle. The determination of the relation between the area of a circle and its diameter: a problem apparently incapable of exact solution.

Squids, (skwidz)=Teuthidæ, *q v.*

Squinancy, (skwin'an-si). [F. *esquinancie*. *S. wort*=Asperula cynanchica.

Squill, (skwil). [*Scilla*, the Latin name. =Scilla, *q v.*

Squillæ, (skwil'lē). [*Scilla*, the Latin name. Animals belonging to Stomapoda.

Squinting, (skwin'ting=Strabismus, *q v.*

Squirrel, (skwir'rel). [Gk. *skia*, shade; *oura*, tail.] = Sciurus: a small gnawing animal, belonging to Rodentia; builds nest in trees; named from its bushy tail. *S. monkey*=Saimiri: insectivorous = Chrysothrix.


Squirrel

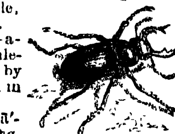
St. Anthony's fire A name for erysipelas.

St. Cuthbert's beads Separate joints of the stem of Encrinites.

St. Elmo's fire. A variety of brush-formed discharge of lightning, seen on masts of ships and other pointed bodies.
St. Ignatius's beans=Ignatia amara.
St. John's Wort=Hypericum.
St Patrick's cabbage=Saxifraga umbrosa.
St. Vitus's dance. Chorea, a disease in which the muscles are affected.
Stable. *S equilibrium*, *v.* Equilibrium.
Stachys, (stā'kis). [Gk. *stachys*]=Woundwort: an herb belonging to Lamiaceæ.
Stackhousiaceæ, (stak-how-si-ā'se-ē) [Mr Stackhouse.] = Stackhousiads: herbs with monopetalous flowers, belonging to Rhamnales


Stag.

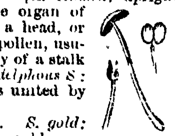
Stag, (stag). [*Steggr*, the Icelandic name.] A general term for a male deer. *S. beetle* = Lucanus cervus = Horn-bug: the largest British beetle, lives in rotten wood.
Staganolepis, (stag-a-nol'e-pis). A crocodile-like reptile, known by fossil remains found in Trias rock.
Stagmaria, (stag-mā'-ri-a). [Gk. *stagma*, drop] A plant belonging to Terebinthaceæ, named from the trees exuding resin.


Stag-beetle.

Stalactites, (sta-lak'tīts). [Gk. *stalasso*, I drop.] Pendant masses of carbonate of lime, usually found in caverns where calcareous water percolates through the roof.
Stalagmites, (sta-lag'-mīts). [Gk. *stalagma*, drop] Carbonate of lime projections, rising from the floor of caverns where calcareous water falls from the roof.


Stalactites.

Stalk-eyed prawn. passes through the forms of Nauplius, Zœa, and Mysis, before becoming fully developed Palæmon
Stallion, (stal'yun). [*Etalon*, the French name] An entire horse, a male horse used for breeding
Stamen, (stā men). [L. *stamen*, upright thread.] The male organ of flowers. consists of a head, or anther, containing pollen, usually at the extremity of a stalk or filament. *Polyadelphous S*: having the stamens united by the filaments.


Stamens

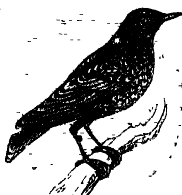
Standard, (standard). *S. gold*: of 22 carats=$\frac{11}{12}$ pure gold. *S. temperature*: for measures of length, 62°F. in Britain, 0°C. in France. *S of length* the yard in Britain; metre in France. *S. of weight*: the pound avoirdupoise in Britain; the kilogramme in France.
Standards. Pieces to connect the stern-post of a ship to the deck-beam.
Stanhope. [Lord Stanhope.] *S. lens*: a hand lens for examining microscopic objects. *S. levers*: in *S. printing press*, by which great pressure is obtained for a short interval of time.
Stannate, (stan'nāt). [Stannic, *q.v.*] A compound of stannic acid with a base. *S. of gold and tin*=Purple of Cassius.
Stannic, (stan'nik). [L. *stannum*, tin.] Used for the persalts of tin. *S. acid*=H_2SnO_3: hydrated stannic oxide. *S. oxide*=SnO_2= Binoxide of tin=Tin-stone, the usual ore of tin. *S. sulphide*=Mosaic gold=SnS_2: a scaly substance used to imitate bronze.
Stannous, (stan'nus). [L. *stannum*, tin.] *S. oxide*=SnO=Protoxide of tin.
Stannum, (stan'num). [The Latin word.]= Sn^{iv}=Tin, *q.v.*
Stapedius, (sta-pē'di-us). [L. *stapes*, stirrup] A muscle in the ear, which tightens the tympanic membrane
Stapelia, (stā-pē'li-a). [J. Stapel, a Dutch botanist] An African plant belonging to Asclepiadaceæ.
Stapes, (stā'pēz). [L. *stapes*, stirrup.] A stirrup-shaped bone in the tympanic cavity of the human ear.
Staphyleaceæ. (staf-i-le-ā'se-ē). [Gk. *staphyle*, bunch of grapes.]=Bladder-nuts: shrubs with terminal flowers and oily seeds, belonging to Sapindales.
Star. *v.* Stars. *Pole S.*, *v.* Pole-star. *S. apple* =Chrysophyllum cainito: belongs to Sapotaceæ. *S clusters*: nebulous groups of stars, such as the Pleiades, Hyades, Præsepe, &c. *S fishes*=Asteridea, *q.v.* *S. fruit*=Actinocarpos, *q v* *S. gazer*=Uranoscopus. *S. reed*=Aristolochia bracteata. *S wheel*=A wheel having the teeth cut deeply, so as to resemble a star in form *S. worts*= Callitrichaceæ, *q.v.*


Star-fish.

Stars, (starz). [*Aster*, the Greek word.] Luminous bodies, all at a vast distance from the earth, about 20 millions in number: from 1st to 14th magnitude: those below 6th magnitude are telescopic: only about 6000 are visible to the unassisted eye, between 1st and 6th magnitudes. *Double S*: two stars which appear to be one, from being in the same line of sight: in some instances two stars revolving round a common centre. *Parallax S.*: having a sensible parallax Arcturus, Capella, Polaris, Sirius, &c. *Sun S*: a term sometimes applied to those which appear to be the centres of systems resembling our solar system: Arcturus, Capella, Sirius, &c. *Variable S.*: those which vary, periodically and regularly, in magnitude.
Starboard, (står bōrd). [*Steorbord*, the A.-S. word.] On the righthand side of a vessel, looking at the bows. *cf.* Port.

Starch, (stärch). [*Starke*, the German word.] =Amylaceous matter=Fecula=$C_6H_{10}O_5$: a white organised farinaceous substance, oval grains of which are found in plants, but not in animals. *S gum*=British gum. *S. hyacinth*=Muscari racemosum.

Starling, (star'ling). [*Stær*, the A.-S. name.] =Sturnus vulgaris: takes nests of other birds.


Starling.

Starry puff-balls = Geaster: belonging to Gasteromycetes, *q v*.

Statice, (sta'ti-se).= Sea lavender: a plant belonging to Plumbaginaceæ.

Statics, (stat'iks). [Gk. *statikos*, stationary] The science of the laws of forces manifested by matter in solid masses that are in equilibrium.

Statoblasts, (sta'to-blasts) [Gk. *statos*, stationary, *blastos*, sprout] Egg-like bodies, developed in many polyzoa. a form of discontinuous gemmation.

Statuary bronze. An alloy of copper, tin, zinc, and lead.

Stealers. Tapering ends of strakes, *q v*.

Steam, (stēm) [A.-S *stem*, vapour.] Water in the form of vapour, especially when produced by direct application of heat for that purpose, is highly elastic, and has a great capacity for absorbing heat. *High pressure S*: having a pressure above 30 lbs to the square inch *Low pressure S.*: having a pressure below 30 lbs. to the square inch. *S. engine:* an apparatus for utilising the elastic force of steam as a motive power.

Steamer-duck=Micropterus brachypterus.

Stearic acid, (stē'a-rik). [Stearin, *q v*]= $C_{18}H_{36}O_2$: a white, crystalline, fatty acid, found in most fats.

Stearic series of acids=Acetic series, *q.v.*

Stearin, (stē'a-rin). [Gk. *stear*, suet.]= $C_{57}H_{110}O_6$: a white crystalline substance, the chief constituent of fats and fixed oils.

Stearates, (stē'a-rāts) [Stearic, *q v*] Compounds of stearic acid with bases.

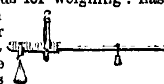
Stearopten, (stē-a-rop'ten). [Gk *stear*, tallow] The solid portion of cooled essential oils

Steatite, (stē'a-tīt). [Gk. *stear*, tallow.] $3MgO$, $4SiO_2$=French chalk=Soapstone: a variety of silicate of magnesium, a soft variety of talc; a mineral substance, with a soap like surface, belonging to the Serpentine group.

Steatornis, (stē-a-tor'nis). [Gk. *stear*, fat, *ornis*, bird.]=Guacharo bird, *q v*.

Steel, (stēl). [*Stel*, the A.-S. name] A compound of iron with a small quantity of carbon: hard and elastic, used for cutting tools, machinery, &c. *Bessemer S.*, *v.* Bessemer. *Cast S.*: steel fused and run into moulds. *Indian S*=Wootz. *Shear S.*: hammered steel: of fine texture, and tougher than ordinary steel.

Steelyard. An apparatus for weighing: has only one weight, which slides along the longer arm of a lever until it balances the body to be weighed, which hangs from the shorter arm. *Danish S.:* in which the fulcrum is movable, so that no separate weight is required.


Steelyard

Steer, (stēr). [*Steor*, the A.-S. name.] A young ox, castrated.

Steganophthalmous, (steg-a-nof-thal'mus). [Gk *steganos*, covered, *ophthalmos*, eye.]= Acraspedote Medusæ. those having the eyes covered. *v* Medusæ

Stein-bok, (stin'bok)=Calotragus campestris: an animal resembling the antelope.

Stellar, (stel'lar). [L. *stella*, star] Relating to the stars.

Stellaria, (stel-lā'ri-a). [L. *stella*, star]= Stitch-wort: an herb belonging to Caryophyllaceæ: named from the form of the flowers

Stellates. (stel'lāts). [L. *stellatus*, starry.]= Galiaceæ, *q v*.

Stem, (stem) [*Stemn*, the A.-S word] That part of a plant which grows upwards from the root, bearing the leaves and flowers, usually green; sometimes underground, then usually brown

Stemmata, (stem-ma'ta) [Gk. *stemma*, garland.] Term used for the circular arrangement of simple eyes in insects.

Stemmatopus, (stem-at'ō-pus). [Gk. *stemma*, garland, *ops*, eye.] =Phoca cristata.


Stemmatopus.

Steneosaurus, (sten-e-o-saw'rus). [Gk. *stenos*, narrow; *saura*, lizard.] A reptile, resembling the crocodile, of which fossil remains are found in the Oolite rocks.

Stenography, (sten-og'ra-fi). [Gk. *stenos*, narrow; *grapho*, I write] Short-hand writing: the use of abbreviations and arbitrary symbols for words.

Stephanite, (stef'a-nīt). [Stephen.]=Brittle silver ore, chiefly sulphide of silver and antimony.

Step-wheels. Wheels having several sets of teeth on the circumference, forming a series of steps

Steppes, (steps). [*Stepi*, the Russian word.] Plains of vast extent, in N.E Europe and N. Asia, are so called. *cf.* Prairie and Pampas

Sterculiaceæ, (ster-kū-li-ā'se-e) [L. *stercus*, manure.]= Sterculiads: baobab, &c, trees and shrubs, chiefly tropical, belonging to Malvales, named from the strong odour of some species.

Stere, (stēr). [Gk. *stereos*, solid]=Cubic meter=1000 cubic decimetres measure of bulk.

Sterelmintha, (ster-el-min'tha). [Gk. *stereos*, solid, *helmins*, worm] A primary division of Entozoa, as arranged by Rudolphi.

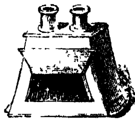
Stereochromy, (ster-e-ō-krō'mi). [Gk. *stereos*,

solid, *chrome*, colour.] A process in fresco-painting by which the colours are covered with a varnish of soluble glass.

Stereognathus, (ster-e-og-nath'us). [Gk. *stereos*, solid, *gnathos*, jaw.] A small animal, belonging to Mammalia, a fossil jaw of which was found in the Stonesfield slates.

Stereography, (ster-e-og'ra-fi). [Gk. *stereos*, solid; *grapho*, I write.] The delineation, on plane surfaces, of the forms of solid bodies.

Stereoscope,* (ster'e-ō-skōp). [Gk. *stereos*, solid, *skopeo*, I view.] An instrument in which two photographs, or pictures, nearly but not quite alike, look like one, the figures looking like solid bodies; each picture is what one eye would see if looking at the actual objects represented, so that the two together give a real picture.



Stereoscope.

Stereotype, (ster'e-ō-tip). [Gk. *stereos*, solid, Type, *q.v.*] A plate of metal, cast from a page or pages of movable type, which can be printed from.

Sterna, (ster'na). [Gk. *sternon*, breast.] *v.* Sternum.

Sternbergia, (stern-ber'ji-a). Fossil pith of trees, found in coal.

Stern-sheets. The hind-part of a boat, between the rowers and the stern.

Sternum, (ster'num). [Gk. *sternon*, breast-bone.]=Breast bone: the central bone formed by the meeting of the ribs.

Stethoscope, (steth-o-skōp). [Gk. *stethos*, breast, *skopeo*, I view.] A medical apparatus, consisting essentially of a tube of wood, by which the pulsations of the various parts of the body can be measured, sounds being conveyed from within the chest to the ear.



Stethoscope.

Sthenic, (sthen'ik). [Gk. *sthenos*, strength.] Related to excessive action, of the heart, &c. *cf.* Asthenic.

Stibium, (stib'i-um). [The Latin word.]= Antimony, *q.v.*

Stick insects=Phasmidæ, *q.v.* *S. lac*, *v.* Lac.

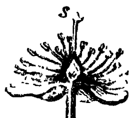
Stickle-back=Gasterosteus trachurus: a small pond-fish.



Stickle-back.

Stigma, (stig'ma). [Gk. *stigma*, mark.] The upper portion of a pistil, upon which the pollen is received.

Stigmaria, (stig-mā'ri-a). [Stigma, *q.v.*] Roots of Sigillaria, found in the fire-clay beneath *the coal-beds.



s, Stigma.

Stigmata, (stig'ma-ta). [Gk. *stigma*, mark.]=Spiracula, in insects.

Stilaginaceæ, (sti-la-jin-ā'se-ē). [*Stilago*, the typical genus.]=Antidesmads: trees and shrubs with leathery leaves, belonging to Urticales.

Stilbaceæ, (stil-bā'se-ē). [*Stilbe*, the typical genus.]=Stilbids: resinous shrubs, with narrow leathery leaves, belonging to Gentianales.

Stilbene, (stil'bēn)=$C_{14}H_{12}$: a hydrocarbon, belonging to the Stilbic series.

Stilbic acid, (stil'bik). [Gk. *stilbe*, lustre.]= Benzilic acid, *q.v.*

Stilbite, (stil'bīt). [Gk. *stilbe*, lustre.]=Hydrated labradorite: a mineral of the Zeolite group, a silicate of alumina and lime, found in Porphyritic rocks.

Stilbyl, (stil'bil). [Stilbic, *q.v.*; Gk. *hyle*, material.]=$C_{14}H_{11}O_2$: the radicle of the Stilbic series; also called Benzile.

Stilbylic acid, (stil-bi-lik)=Stilbic acid.

Still, (stil). [L. *stilla*, drop.] An apparatus for distillation.

Stillingia, (stil-lin'ji-a). [Dr Stillingfleet.] A plant belonging to Euphorbiaceæ. *S. sebifera*=Tallow tree.

Stilpnosiderite, (stilp-nō-sid-e-rīt). A dark variety of limonite, one of the iron group of minerals.

Stilt plover. A variety of the plover, named from its long legs.

Sting. *S.-bull*=Trachinus draco. *S.-fish*=Trachinus vipera. *S.-ray*=Trygon pastinaca.

Stiperstones group. Lowest beds of Lower Silurian=Lower Llandeilo.

Stipules, (stip'ūlz). [L. *stipula*.] Scales at the bases of some leaves. *Without S.*=Exstipulate.



a, Stipule.

Stitch-wort=Stellaria, *q.v.*

Stoat, (stōt)=Mustela erminea: a small animal belonging to Mustelidæ.



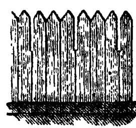
Stoat.

Stock = Matthiola, *q.v.* *S. dove*=The wild pigeon.

Stockade, (stok-ād'). A fortification of rough-hewed wood.

Stolon, (stō'lon). [L. *stolo*, shoot-fork.] An offshoot: a connecting band or tube in Ascidians, etc.

Stomach, (stum'ak). [*Stomachus*, the Latin word.] An enlargement of the gullet, in which the food is digested with gastric juice, and converted into chyme.



Stockade.

Stomach animals. Oken's term for Infusoria.

Stomapoda, (sto-map'ō-da). [Gk. *stoma*, mouth, *poda*, feet.]=Stomatopoda: Crustacean animals with a cephalic carapace and stalked eyes.

Stomates, (stō'māts). [Gk. *stoma*, mouth.] Openings in the epidermis of plants: not found in cryptogamic plants, nor in any plants growing in darkness.

Stomatoda, (stō-mat'ō-da). One of Ehrenberg's divisions of Infusoria.

Stomatopoda, (stō-ma-top′ō da). [Gk. *stoma*, mouth; *pous*, foot.] One of Hœven's subdivisions of Crustaceans. *v.* Stomapoda.

Stone, (stōn) [*Stan*, the A.-S. word.] 1. A general term for hard earth, when put to use, as for building, road-making, &c. 2. A concretion of inorganic matter, also called Calculus, sometimes formed in the body, either by mechanical aggregation or as sediment from the secretions. *S. bed:* a bed of flints, below the Norwich Crag, containing fossil remains of mastodon, &c. *S. chat*=Saxicola rubicola. *S crop*=Sedum, *q v. S. flies* =Semblis *S lichen*=Parmelia fahlunensis.

Stonesfield slate. A bed of limestone belonging to Great Oolite, containing many fossil remains, especially remarkable for the mammalian fossils found in it.

Stools of trees. Roots and lower portions of trunks

Stope, (stōp) A piece of ground to be worked as a mine=Ore when still in the mine.

Storax, (stō′raks) *v.* Styrax.

Storax-worts, (stō′raks) =Styraceæ, *q.v.*

Stork, (stork) Ciconia alba *S.'s bill* = Erodium.


Stork

Strabismus, (stra-biz′-mus). [L. *strabo*, squinter.) = Squinting: an imperfection in eye-sight, caused by the axes of the two eyes not being symmetrically directed.

Strakes, (strāks) [Streak] The long planks at the side of a ship.

Stramonium, (stra-mō′-ni um). [The Latin name.]=Daturia stramonium; also called Thorn apple

Strap-wort=Corrigiola: an herb belonging to Paronychiaceæ.

Strata. Plural of stratum, *q.v.*

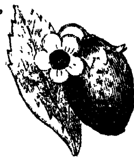
Stratification, (strat-i-fi-kā′shun). [Stratum, *q.v*; L. *facio*, I make.] Division into distinct layers; used especially in geology

Stratiotes, (strat-i-ō′tēz). [Gk. *stratiotes*, soldier] = Water-soldiers; aquatic herbs belonging to Hydrocharidaceæ.

Stratum, (strā′tum). [The Latin word.]= Bed: any thing strewn over a surface, or spread out as a layer

Stratus, (strā′tus). [L. *stratum*, a layer.]= Cloud of night: a widely extended cloud.

Strawberry, (straw′ber-ri). [Straw and Berry, or Stray-berry.]=Fragaria, *q v.* *S.-tree* = Arbutus Unedo: named from the form of its fruit.


Strawberry.

Straw-fiddle. A variety of Claque-bois, *q.v*, in which the wooden bars rest on twisted straw.

Streak, (strēk). The colour of a mineral when powdered, usually darker than the mineral, if it be a metal; and lighter, if non-metallic.

Stream-tin=Alluvial tin-ore.

Strepsiptera, (strep-sip′ter-a). [Gk. *strepsis*, twisting; *pteron*, wing.] Insects whose anterior wings are twisted, parasitic on bees and wasps

Strepsirhina, (strep-si-rī′na). [Gk. *strepsis*, twisting, *rhin*, nose.] A sub-division of quadrumana by Owen, represented by the lemur.

Streptospondylus, (strep-tō-spon′di-lus). [Gk *streptos*, twisted; *spondylus*, an upper vertebra.] A saurian animal, known only by fossil bones and teeth, found in Oolite rocks.

Stretcher. In brickwork, a brick placed lengthways.

Stridulation, (strid-ū-lā′shun). [L *stridulus*, creaking.] In insects, such as the cricket, grasshopper, &c; the sound made by the movements of the wing-cases, legs, etc.

Strigidæ, (strij′i-dē). [Strix, *q v.*] Owls, &c., a family of birds, chiefly nocturnal, belonging to Raptores

Strike, (strīk). Direction of strata at right angles to their dip; if the dip be represented by the slope of the slates of a house-roof, the direction of the ridge will represent the strike.

String. *S boards:* long boards supporting the ends of a flight of steps, &c. *S courses:* projecting lines of masonry in a wall

Strix, (striks) [The Latin name] Owl: a nocturnal bird, the type of Strigidæ.

Strobila, (strob′i-la) [Gk *strobilos*, fir-cone] The collective name for a scolex and all the successive proglottides which have budded from it

Strontia, (stron′shi-a). [Strontian, in Argyleshire]=SrO: oxide of strontium, a white substance resembling baryta in properties.

Strontic, (stron′tik). [Strontium, *q v*] Containing strontium as the chief constituent.

Strontium, (stron′shi-um). [Strontia, *q.v*] =Sr″: one of the alkaline earth-metals, found in limestones, a yellow malleable substance, which decomposes water by contact, owing to its affinity for oxygen.

Struthio, (strō′thi-ō). [The Latin name.] Ostrich: the type of Struthionidæ, *q v.*

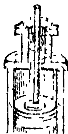
Struthionidæ, (strō-thi-on′i-dē) [Struthio, *q v.*, Gk *eidos*, form] A family of birds, having long legs and very short wings; including the ostrich, emu, cassowary, and apteryx.

Struthious birds, (strō′thi us). Ostrich, emu, cassowary, &c.

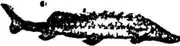
Strychnia, (strik′ni-a). [Strychnos, *q v*] = $C_{21}H_{22}N_2O_2$: a powerful alkaline base, very poisonous, found in the seeds of strychnos.

Strychnos, (strik′nos). [The Greek name.] A tropical plant, the seeds of which are very poisonous. *S. nux-vomica:* an Indian tree with small flowers and very poisonous seeds.

Stuffing-box. A small enclosure to prevent the escape of steam, &c, at a joint in machinery.


Stuffing-box

Sturgeon, (sterj'on) [*Esturgcon*, the French name]=Accipenser Sturio a fish, the type of Sturionidæ, from the roe of which caviare is prepared, and from the swim bladder isinglass.


Sturgeon

Sturionidæ, (stū-ri-on'i-dē). [Sturio; Gk. *eidos*, form] A family of large fishes belonging to Ganoidei

Sturnidæ, (ster'ni-dē). [Sturnus, *q v*] A family of birds belonging to Conirostres

Sturnus, (ster'nus). [The Latin name] Starling: a song bird, the type of Sturnidæ.

Style, (stīl). [L *stylus*, pillar] The thread-like portion of a pistil, *q v*. *Old S.:* the method of estimating the Julian year which was general up to 1582 A D, now almost obsolete in Europe *New S.:* according to the Gregorian correction, made 1582 A D, by which ten days were omitted to bring the civil and astronomical years into accordance.



b, Style

Stylidiaceæ, (sti-li-di-ā'se-ē) = Style-worts: herbs, with monopetalous flowers, belonging to Campanales.

Stylobate, (stī'lo-bāt). [Gk. *stylos*, pillar, *basis*, base] A continuous pedestal supporting a row of columns

Styloid, (stī'loid). [Gk. *stylos*, pillar, *eidos*, form] Pillar-like, used of small columnar projections

Styphnic acid, (stif'nik)=Oxypicric acid, *q v*.

Styraceæ, (sti-rā'se-ē). [Styrax, *q.v*]=Storax-worts: shrubs and trees, with axillary monopetalous flowers, belonging to Rhamnales

Styracin, (stī'ra-sin) [Styrax, *q.v.*]=$C_{18}H_{16}O_2$: a crystallisable substance found in balsam of Peru.

Styrax, (stī'raks) [The Latin name] A plant, the type of Styraceæ. *S benzoin*= Gum Benjamin tree

Styrol, (stī'rol) [Styrax, *q v*.] *v* Styrolene.

Styrolene, (stī-ro-lēn) [Styrol, *q.v.*]=C_8H_8 =Styrol =Cinnamol, *q v*

Suæda, (so-ē'da) Sea-blite: a plant belonging to Chenopodiaceæ.

Sub-, (sub) [L *sub*, under.] A prefix, implying an inferiority of position or constitution.

Sub-chlorides=Basic chlorides: compounds of one atom of a dyad, or two atoms of a monad, with one atom of chlorine.

Sub-dominant The fourth note of a musical scale In the key of C, the sub-dominant is F, and the dominant is G.

Sub-duplicate ratio. The ratio of the square roots of two numbers is the sub-duplicate ratio of the numbers

Suber, (su'ber). [L. *suber*, cork tree] Cork *Quercus S.:* Cork tree; an oak tree. *i.* Cork.

Suberic acid, (sū-ber'ik). [Suber, *q v.*] = $C_8H_{14}O_4$: a crystalline acid substance obtained by the sublimation of cork, fats, &c.

Sublimation, (sub-lim-ā'shun). [L. *sublimis*, lofty.] Distillation of a solid, conversion of a solid into a vapour and re-condensation into the solid form

Sublingual gland. Below the tongue.

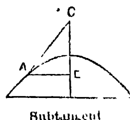
Submagnet=Armature, *q v*

Submaxillary glands. At the lower side of the face

Suboxides Of the type H_2O, feebly basic, in which two atoms of a dyad element unite with one of oxygen.

Subsalts=Basic salts, *q.v.*

Subtangent. The line under a tangent AC being the tangent, CE is the subtangent.



Subtangent

Subtrahend, (sub'tra-hend). Anything to be withdrawn or subtracted. In 18—12, 12 is the subtrahend.

Sub-triplicate ratio. The ratio of the cube-roots of two members is the sub-triplicate of the numbers.

Subularia, (su-bū-lā'ri-a). [L *subula*, awl] A plant belonging to Brassicaceæ, named from the shape of the leaves. *S aquatica:* awl wort

Subungulati, (sub-un-gwa-lā'ti). [L. *sub*, under; *ungual*, claw] Animals, such as the Paca and Cutia, found only in S. America, which connect the Pachydermata with the Rodentia

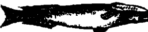
Succinamide, (suk-sin'a-mīd) [*Succinic*, *q.v.* and *Amide*]=$C_4H_8N_2O_2$ a crystalline substance obtained by the action of ammonia on succinic acid

Succinates, (suk'sin-āts). [Succinic, *q.v.*] Compounds of succinic acid and bases.

Succinic acid, (suk-sin'ik) [L *succinum*, amber] = $C_4H_6O_4$ a crystalline substance found in amber and in wormwood leaves, belonging to the Oxalic series.

Succory, (suk'o-ri). [Chicory, *q.v*] Chicory Cichorium intibus, a plant belonging to Cichoraceæ.

Sucking. *S. fishes:* Discoboli, having the ventral fins terminating in a sucker, by which they adhere to rock, &c *S insects*=Haustellata.


Sucker or Sucking Fish

Sucrose, (so'krōs) [Saccharose, *q. v.*]=Cane sugar =$C_{12}H_{22}O_{11}$. a variety of sugar obtained from sugar-cane.

Suction pump. By which water is drawn up by means of a vacuum.

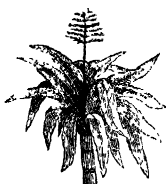
Suctoria, (suk-tō'ri-a) 1. One of Hoeven's sub-divisions of insects 2 One of Hoeven's sub-divisions of ringed worms

Sudoriparous glands. (sō-do-rip-a-rus). [L *sudo*, I perspire.] Those which excrete perspiration

Suet, (sū'et). [*Sebum*, the Latin word.]=Fat of ox or sheep; in the latter nearly all stearin.

Sugar, (shoo'gar). [*Sucre*, the French word] A sweet antiseptic substance found in most plants, especially in the sugar-cane. *Cane S.* =Sucrose: from sugar-cane. *Grape S.*=

Glucose=Dextrose: from fruit, starch, &c. *Honey S.*: resembles manna. *Maple S*: from acer saccharinum *Milk S.*=Lactose. *S berry* =Celtis occidentalis. *S cane*=Saccharum officinarum. *S lice* = Lepisma. *S of lead*=Normal plumbic acetate *S. of milk* = Lactin= Lactose=$C_{12}H_{24}O_{12}$: found only in milk *S. squirrel* = Petaurus sciureus.


Sugar cane.

Suidæ, (sō'i-dē). [Sus, *q v*; Gk *eidos*, form.] A family of Pachydermata, including all the varieties of Swine.

Sula, (sū'la). [The Latin name.] A bird belonging to Pelecanidæ *S. alba*=Solan goose

Sulphacetic acid, (sul-fa-sē'tik)=$C_2H_4O_2SO_3$: a crystalline dibasic acid

Sulphate, (sul'fāt) [Sulphur, *q v.*] A compound of sulphuric acid with a base *S. of copper*=Blue vitriol.

Sulphate of mercury battery=Mario Davy battery, *q v.*

Sulphide, (sul'fīd). [Sulphur, *q v.*] =Sulphuret: a compound of sulphur with a metal, usually solid *S. of lead.* 1 —PbS =Protosulphide =Galena 2.=Pb_2S = Subsulphide = Lead matt

Sulphocyanogen=SCy: a sulphide of cyanogen, a compound radicle.

Sulpho salts. Compounds resembling oxysalts, but with the oxygen replaced by sulphur

Sulphur, (sul'fer) [The Latin word]=S" a highly inflammable brittle mineral substance, one of the constituents of gunpowder, usually found near volcanoes *Flowers of S* =Sublimed S *Stick S.*=Brimstone. *S alcohol*=Mercaptan=Sulph-hydrate of ethyl; a white fluid, the vapour of which produces dreaminess and a sense of fatigue *S group.* sulphur, selenium, and tellurium; all having a strong attraction for oxygen. *S.-wort:* Peucedanum officinale.

Sulphuretted, (sul-fū-ret'ed). [Sulphur, *q v.*] Impregnated with sulphur: containing sulphur as a constituent. *S. hydrogen*=Hydrosulphuric acid, *q.v*

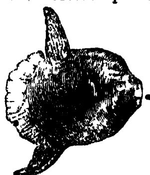
Sulphuric, (sul-fu'rik). [Sulphur, *q v*] *S acid* = H_2SO_4 = Dihydric sulphate=Oil of vitriol: an oily, colourless, caustic liquid, with a great attraction for water, and much used in manufactures *S. ether*=$(C_2H_5)_2SO_4$ =Diethyl sulphate: an oily liquid, obtained by combining sulphuric anhydride and ether.

Sulphurous acid, (sul'fū-rus). [Sulphur, *q.v.*] SO_2: a colourless suffocating gas, having strong bleaching properties, now called Sulphurous anhydride.

Sumach, (sū'mak). [*Sumac*, the French name.] =Rhus: a N. American plant, having a milky juice, with strong medicinal properties, from which tannic acid is obtained.

Summer. *v.* Seasons.

Sun, (sun). [*Sunne*, the A.-S word.] The centre of the solar system: 91 millions of miles distant from the earth, having a diameter of 850,000 miles, considered as one of the stars, the Sun is a variable star, with a period of 14 years *Mean S* an imaginary sun, whose motion through the heavens is at a uniform rate. *S birds*=Promeropidæ. *S. fish* = Orthagoriscus named from its globular form. *S. flower* = Helianthus. *S. spots* hollows in the photosphere of the sun *S stars:* very distant; such as Capella, Arcturus, Sirius, &c., *v.* Stars. *S stone*: a beautiful variety of felspar.


Sunfish.

Sun and planet wheels. Two wheels of different sizes, the smaller of which travels round the circumference of the larger.

Sundews=Droseraceæ, *q v.*

Superficies,(sū-per-fish'i-ēz). [The Latin word.] Surface.

Supination, (sū-pin-ā'shun) [L. *supinus*, bent back] Generally lying with the face upwards, of the hand, with the palm upwards

Supplemental. *S air* which remains in the chest, in addition to the *residual air*, and can be expelled only by an extraordinary effort=about 80 cubic inches *S triangle*: a spherical triangle, formed by joining the poles of three great circles; also called Polar triangle

Supra-occipital, (sū-prā-oks sip'i-tal). [L. *supra*, above, *occiput*, back of head] Above the occiput *S bone:* the uppermost bone of the first cranial segment.

Surd, (serd) [L. *surdus*, indistinct.] A number which cannot be exactly determined

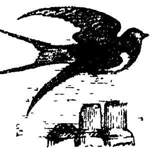
Surf-duck. Oidemia perspicillata

Surveying, (ser-vā'ing). The determination of the form and extent of any portion of the earth's surface. *Trigonometrical S*: in which the calculations are made by dividing the given surface into triangles.

Sus, (sūs) [The Latin name]=Hog. *v.* Suidæ; the female of sus=Sow.

Suture, (sū'tūr) [L. *sutura*, seam.] 1. The union of two pieces of bone. 2 The sewing together of two edges of a wound.

Swallow, (swol'lō) [*Swalewe*, the A.-S. name] =Hirundo, *q v.* *S. hawk* a variety of the hawk. *Sea swallow*= Tern. *S.-worts*=Asclepias.


Swallow

Swan=Cygnus, *q v.*

Swash-plate. A plate set obliquely on a spindle, and by its revolution moving a sliding bar to and fro.

Sweat, (swet). [*Swat*, the A.-S. word.] = Perspiration, *q.v.*


Swan.

Sweet. *S. bay*=Laurus nobilis. *S. bread*=Pancreas. *S. briar*=Rosa rubiginosa. *S. calamus*=Acorus. *S. flag*=Acorus. *S. gale*=Myrica. *S. gum*=Liquidambar. *S. potato*=Batatas edulis. *S. sop*=Anonus. *S. William*=Dianthus barbatus.

Swietenia, (swi-e-tā'ni-a). [Herr Swieten.] A tree belonging to Cedrelaceæ, the wood of which is mahogany, *q.v.*

Swift, (swift)=Hirundo apus.

Swim-bladder. An air-vessel in most fishes, by compression or expansion of which they can sink or swim in water.

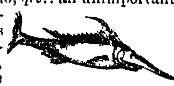

Swift.

Swimming. *S. bell*=Nectocalyx. *S. birds*=Natatores.

Swine, (swīn). [*Swin*, the A.-S. word.]=Suidæ, *q.v.* *S. stone*: a variety of marble having a somewhat fœtid odour. *S.'s succory*=Arnoseris.

Swinging a ship. The correction of the compass, by ascertaining the amount of local deviation, as the ship's head is brought to each point of the compass in succession.

Sword fish. 1.=Dorado, *q.v.*: an unimportant southern constellation. 2.=Xiphias gladius, a fish belonging to Scombridæ, having a sword-like beak.


Sword-fish.

Sycamore, (sik'a-mor). [Gk. *sykon*, fig; *moron*, mulberry.]=Acer pseudo-platanus: a large tree; also called Plane-tree. *S. fig*=Ficus sycomorus.


Sycamore

Sychondrosis, (si-kon-drō'sis). [Gk. *syn*, with; *chondros*, cartilage.] A method of union between two bones.

Syenite, (si'e-nit). [Syene, in Egypt.] A rock, resembling granite, composed of quartz, felspar, and hornblende: one of the Plutonic rocks.

Sylvia, (sil'vi-a). [L. *sylva*, forest.] The type of Sylviadæ, *q.v.*

Sylviadæ, (sil-vī'a-dē). [Sylvia, *q.v.*; Gk. *eidos*, form.] A family of birds belonging to the dentirostral division of Insessores; includes the robin, nightingale, &c.

Sylvian fissure, (sil'vi-an). A fissure in the brain.

Sylvic acid, (sil'vik).=$C_{20}H_{30}O_2$: a resinous acid found in brown rosin.

Sylvanite, (sil'va-nit). [Transylvania.] A mineral, consisting chiefly of tellurium, gold, and silver.

Symbol, (sim'bol). [*Symbolum*, the Latin word.] In mathematics, the letters and other signs used in expressing unknown quantities and their relations.

Symmetrical animals. Burmeister's term for Vertebrata, Arthrozoa, and Mollusca.

Symmetry, (sim'met-ri). [*Symmetria*, the Greek word.] Harmony: the due proportion of the parts of a body to each other.

Sympathetic, (sim-pȧ-thet'ik). [Gk. *syn*, with; *pathos*, feeling.] *S. ink*: a dilute solution of cobaltic chloride, which is invisible on paper until it be heated. *S. nervous system*=Splanchnic nervous system: the sympathetic ganglia, lying in front of the spinal column, with the nerves and the connecting nervous cords.

Symphisis, (sim'fi-sis). [Gk. *symphysis*, growth together.] A union of plates with interposed membrane.

Symphytum, (sim'fi-tum)=Comfrey: an herb belonging to Boraginaceæ.

Sympiesometer, (sim-pi-e-som'e-tėr). [Gk. *syn*, with, *piezo*, I press.] A barometer of air and glycerin, depending upon compression of air.

Symplocarpus, (sim-plō-kär'pus). A plant belonging to Araceæ.

Synacmy, (sin-ak'mi). [Gk. *syn*, with; *akme*, maturity.] When the pistils and stamens of a flower ripen together.

Synaptase, (sin-ap'tās). [Gk. *syn*, together; *apto*, I unite.]=Emulsin: a fermenting matter found in almonds.

Synapticulæ, (sin-ap-tik'ū-lē). [Gk. *syn*, together, *apto*, I unite.] Minute cross-bars uniting septa.

Syncarpous, (sin-kär'pus). [Gk. *syn*, together; *karpos*, fruit.] Having the carpels united in the ovary.

Synclinal, (sin-klī'nal). [Gk. *syn*, with; *klino*, I incline.] *S. line*: an imaginary line drawn through the lowest part of a valley formed by the curvature of strata. *S. curve*: of strata that curve concavely upwards.

Syncope, (sin'kō-pē). [Gk. *synkope*, cutting off.] 1. Fainting: suspension of the circulation of the blood. 2. A general term for cutting through.

Syndactyles, (sin-dak'tī-lēz). [Gk. *syn*, together, *daktylos*, finger.] A sub-division of Marsupialia represented by kangaroos, &c.

Syngenesious, (sin-je-nē'zi-an). [Gk. *syn*, together, Genesis, *q.v.*] Having the stamens united.

Syngnathus, (sing-nath'us). [Gk. *syn*, with; *gnathos*, jaw.]=Pipe-fish: a fish having a long slender body and snout, the type of the family Syngnathidæ, which includes pipe-fishes and sea-horses.

Synodic period, (sin-od'ik). [Gk. *syn*, with; *hodos*, road.] 1.=Lunation=Lunar month. 2.=The time between any given heavenly body returning to the same position with respect to the Sun: in the case of the Moon =29d. 12h. 44m.

Synodical, (sin-od'i-kal)=Synodic, *q.v.*

Synœcious, (sin-ē'si-us). [Gk. *syn*, with; *oikos*, house.] Having male and female fruit in the same head. *cf.* Diœcious.

Synoptic, (sin-op'tik). [Gk. *synopsis*, a general view.] A general view of the whole of any subject.

Synovia, (sin-ō'vi-a). [Gk. *syn*, with; *ovum*, egg.] A fluid secreted by the synovial membrane for the lubrication of the joints of the bones.

Synovial membrane, (sin-ō'vi-al). [Synovia, *q v*] Covering the bones at the joints, and secreting synovia.
Synthesis, (sin'-the-sis) [Gk. *synthesis*, a putting together.] Formation of a compound by the direct union of the constituents. *cf.* Analysis.
Syntonin, (sin'to-nin) [Gk. *syn*, with; *teino*, I extend] A variety of fibrin, the chief constituent of muscular fibre.
Syphon, (sī'fon). A bent tube, of which the legs are of unequal length; if the shorter end be immersed in a liquid, and the air exhausted from the syphon, the liquid will rise and flow through the syphon. *S. barometer:* a modification of the cistern barometer, in which the cistern is replaced by a short tube.
Syren, (sī'ren). [Gk. *siren*, water nymph] An instrument for measuring the number of vibrations required to produce a given musical note.
Syringa, (sī-ring'a) [Gk. *syrinx*, pipe.]= Lilac. a plant belonging to Oleaceæ.
Syringe, (sir'inj). [Gk. *syrinx*, pipe.] A small pipe, terminating in a small opening, with a piston working in it, used for injection of liquids. *Pneumatic S*, *v*. Pneumatic.
Syrinx, (sī'rinks). [Gk. *syrinx*, pipe] The lower part of the larynx, a modification of the trachea at its junction with the bronchi. The organ of song in birds.
Syrup, (sir'up). A solution of sugar, usually flavoured by some other substance, *e g*, Syrup of violets, &c.
System, (sis'tem). [*Systema*, the Greek word.] A number of things having some general relation to each other; arrangement of things in order, according to some comprehensive plan. *Botanical S.*, *v* Botanical. *Linnæan S.*, *v*. Linnæus's. *Natural S.*, *v*. Lindley's.
Systemic, (sis-tem'ik). [System, *q.v.*] Related to a system.
Systoles, (sis'tō-lēz. [Gk. *systello*, I contract.] Contractions: used for the contractions of the auricles and ventricles of the heart
Syzygies, (siz-i'jez). [Gk *syzygia*, union]= Linear relations, used to express the Sun Moon and Earth being in one line.
Syzygy. Singular of Syzygies, *q v*.

T.

Tabanus, (ta-bā'nus) [The Latin name.]= Horse-flies: an insect, the type of Tabanidæ, a family belonging to Diptera.
Tabbinet, (tab'bi-net). A variety of watered silk.
Tables. See pages 351, 352.
Tabular, (tab'ū-lar). [L. *tabula*, board.] Occurring in plates or small tables.
Tabulæ, (tab'ū-lē). [The Latin word.] A general term for small plates; as plates found in Aporose, Perforate, and Rugose corals.
Tabulata corals, (tab-ū-lā'ta). A sub-division of Zoantharia; a group of corals, removed from Madreporaria; having horizontal plates dividing the corallite into compartments; abundant in Palæozoic and in Tertiary strata, but absent in Secondary.
Taccaceæ, (tak-kā'se-ē). [Tacca, the typical genus]=Taccads: large tropical herbs, with tuberous roots, belonging to Narcissales.
Tachometer, (tak-om'e-ter). [Gk. *tachos*, speed; *metron*, measure] An apparatus for measurement of velocity, especially in machinery.


Tachometer.

Tachypetes, (tak-ip'e-tēz) [Gk. *tachys*, quick; *petao*, I fly] =Frigate-bird, *q v*.
Tachysaurus, (tak-i-sau'rus). [Gk. *tachys*, swift; *saura*, lizard.] *T. japonicus*=Grass lizard, *q.v.*
Tacking, (tak'king). The zigzag course taken by a vessel sailing against an adverse wind.
Tactile corpuscles, (tak'tīl) [L *tactilis*, touchable] Oval swellings of the nerves of touch, where that sense is delicate, as in the tongue, fingers, &c.
Tadorna, (ta-dor'na). [*Tadorno*, the Spanish name.]=Sheldrake or Shelduck: a bird belonging to Anatidæ.
Tadpole, (tad'pōl). [A -S. *tade*, toad, *pola*, young] A young frog, in the first stage of its development. *T. fish*=Raniceps trifurcatus.
Tænia, (tē'ni-a). [L. *tænia*, ribbon]=Tapeworm: an intestinal worm, the type of Tæniada.
Tæniada, (tē-nī'a-da). [Tænia, *q.v.*, Gk. *eidos* form.]=Tape-worms and bladder-worms: a division of Scolecida, internal parasitic hermaphrodite animals, which have no alimentary canal; also called Cestoidea.
Tænioidea, (tē-ni-oi'de-a). [L. *tænia*, ribbon Gk. *eidos*, form]=1 Riband fishes: a family of mackerel-like fishes, belonging to Acanthopterygii 2 Sometimes used as: Tæniada.
Tænite, (tē'nīt). [L. *tænia*, ribbon.] An alloy of iron.
Tail, (tāl). [*Tægl*, the A -S word.] In whales, dolphins, &c, a horizontal expansion of the skin, in fish vertical and with fin rays. *Homocercal T.*, *v*. Homocercal. *Heterocercal T.*, *v*. Heterocercal in sharks, dogfish, sturgeon, &c. *Prehensile T*: found only in American Primates. *Tailed amphibia*=Urodela.
Tail-race. The stream of water running from a water-wheel, which has been moved by it.
Tails. *Horse-T.*=Equisetaceæ.

Tail-worts=Tiımrıdaceæ.

Talbotype, (tal'bo-tīp). [Mr. Talbot.] A method of photography, in which the image is taken on paper coated with iodide and nitrate of silver.

Talc, (talk). [*Talk*, the German word.]= =$4MgO,5SiO_2$: a soft variety of silicate of magnesium, crystallising in hexagons; a mineral belonging to the Serpentine group.

Talegalla, (tal-e-gal'la). A turkey like bird, found only in Australia and the Indian islands.

Talitrus. A small crustacean, belonging to Amphipoda. *T. locusta*=Sand-hopper.

Tallow, (tal'lō). [*Tælg*, the A.-S. word.] A general term for solid oil or fat, especially of the higher animals. *Mineral T.*=Hatchettite: a solid variety of bitumen. *T. tree* = Pentadesma butyracea, also = Stillingia sebifera.

Talpa, (tal'pa). [The Latin name.]=Mole: a small insectivorous quadruped, the type of Talpidæ; has a long head, rudimentary eyes, and short fore legs.

Talpidæ, (tal'pi-dē). [Talpa, *q.v.*: Gk. *eidos*, form.] = Moles: a sub-division of Insectivora.

Talus, (tā'lus). [The Latin word.] Ankle: ankle-bone.

Tamandua, (tā-man'-dō-ı). [The Portuguese name.] An ant eating quadruped = Myrmecophaga jubata.


Tamandua

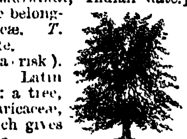
Tamaricaceæ, (tam-a-ri-kā'se-ē). [Tamarisk, *q.v.*] = Tamarisks: shrubs and herbs, belonging to Violales.

Tamarin, (tam'a-rin) = Midas rosalia: a South American monkey.


Silky Tamarin

Tamarindus, (tam-a-rind'us). [Ar. *tamarhindi*, Indian date.] =Tamarind: a tree belonging to Leguminaceæ. *T. Indica*=Indian date.

Tamarisk, (tam'a-risk). [*Tamariscus*, the Latin name.] = Tamarix: a tree, the type of Tamaricaceæ, one variety of which gives Mount Sinia manna.


Tamarind tree

Tamping, (tam'ping). In blasting, the filling up of the hole made in boring, so that the force of the gunpowder, &c., shall not escape.

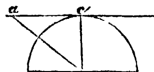
Tamus, (tā'mus)=Black bryony: a plant belonging to Dioscoreaceæ.

Tan, (tan). [The French word.] The bark of the oak, elm, &c., ground, used in tanning.

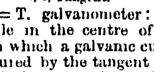
Tanacetum, (tan-a-sē'tum)=Tansy: an herb belonging to Asteraceæ.

Tanager, (tan'a-jer) = Rhamphocœlus passerini=Tanagra: a polygamous bird, of tropical America, having brilliantly-coloured plumage.

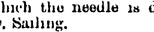
Tangent, (tan'jent). [L. *tango*, I touch.] In any right-angled triangle the tangent of any one of the angles is the ratio of the side opposite to the angle to the side joining it with the right angle. *T. compass* = T. galvanometer: a small magnetic needle in the centre of a large copper hoop, in which a galvanic current passing is measured by the tangent of the angle through which the needle is deflected. *T. sailing*, *v.* Sailing.



a, c, Tangent.

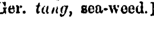
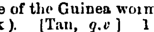
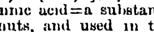
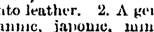


Tangles, (tang'lz). [Ger. *tang*, sea-weed.]= Algæ, *q.v.*

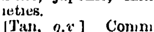
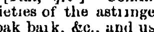


Tank-worms. A stage of the Guinea worm.

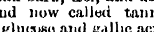
Tannic acid, (tan'nik). [Tan, *q.v.*] 1 = $C_{27}H_{22}O_{17}$ = Gallotannic acid=a substance obtained from gall nuts, and used in the conversion of skins into leather. 2. A general term for morıtannic, japonic, mimotannic, and other varieties.

Tannin, (tan'nin). [Tan, *q.v.*] Common name for several varieties of the astringent principle found in oak bark, &c., and used in tanning hides, and now called tannic acid; breaks up into glucose and gallic acid.

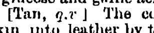



Tanning, (tan'ning). [Tan, *q.v.*] The conversion of animal skin into leather by the combination of tannic acid with it.

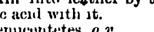


Tanrec, (tan'rek). Hemicentetes, *q.v.*

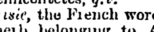
Tansy, (tan'zi). [*Tanaisie*, the French word.] =Tanacetum: an herb belonging to Asteraceæ.



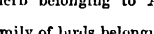
Tantalinæ. Ibis: a family of birds belonging to Grallatores.



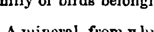
Tantalite, (tan'ta-līt). A mineral, from which tantalum is obtained.



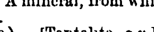
Tantalum, (tan'ta-lum). [Tantalite, *q.v.*]= Ta: a rare metal, obtained from tantalite, formerly confounded with columbium.



Tantalus, (tan'ta-lus.) A bird, resembling the ibis, belonging to Scolopacidæ.

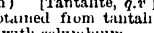
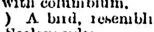


Tap. *T. root:* such as the roots of the parsnips, turnip, carrot, &c.

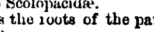


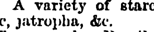
Tape-worms=Tæniada, *q.v.*

Tapioca, (tap-i-ō'ka). A variety of starch; from roots of mandioc, jatropha, &c.

Tapir, (tā'per). [*Tapyra*, the Brazilian name.] An animal belonging to the Perissodactyle division of Ungulata: the last representative of an extensive Eocene group of animals.



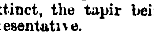




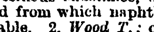
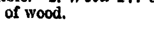
Tapir.

Tapirinæ, (tā-pi-rī'nē). [Tapir, *q.v.*] A group of animals nearly extinct, the tapir being the only existing representative.



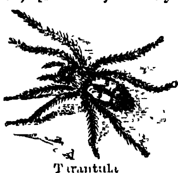


Tar, (tar). [*Teru*, the A.-S. word.] 1. *Coal T.*: a black viscid resinous substance, obtained from coal, and from which naphtha and pitch are separable. 2. *Wood T.*: obtained by distillation of wood.

Tarandus, (ta-ran'dus) [The Latin name] =The Reindeer, a northern constellation, of small stars only.

Tarantula, (ta-ran'tū-la) [Taranto, in Italy.] = Aranea tarantula a spider-like animal, belonging to Araneida


Tarantula

Taraxacum, (ta-raks'-a-kum) [Gk *tarasso*, I shake.]= Dandelion: an herb, with milky juice, belonging to Asteraceæ.

Tardigrada, (tȧr-di-grā'da). [L. *tardus*, slow; *gradior*, I move.] = Water sloths = Water bears=Arctisca, *q v.*

Tare, (tār)=Vicia, *q v.*

Tarpaulin, (tar-paw'lin). [Tar and Pall] Canvas made waterproof by a coating of tar.

Tarsal bones, (tar'sal). [Tarsus, *q v*] Seven bones forming heel, ankle, and part of sole.

Tarsipedes, (tar-sip'e-dez). [L. *tarsus*, sole; *pes*, foot.] Marsupial animals belonging to Syndactyles.

Tarsius, (tar'si-us). One of the half-apes.

Tarso-metatarsus. A bone made up by the union of the tarsus and metatarsus.

Tarsus, (tȧr'sus) [Gk. *tarsos*, sole.] The bones forming the ankle and heel.

Tartar, (tar'ter)=Hydropotassic tartrate.

Tartar-emetic=Potassic antimonious tartrate

Tartarian-lamb, (tar-tā'ri-an) [Found in Tartary.]=Aspidium barometz: a fern, the rhizome of which has a resemblance, in form, to a lamb.

Tartaric acid, (tȧr-tar'ik). [Tartar, *q.v*]= $C_4H_6O_6$ = Hydric tartrate = a transparent crystalline substance, found in the grape, and also obtained from succinic acid. *Iso-T'* =Tartrelic acid. *Para-T.*=Racemic acid.

Tartini's tones, (tar-tē'ni)=Difference tones, *q.v.*

Tartralic acid, (tȧr-tral'ik). [Tartar, *q.v.*]= Ditartaric acid, *q.v.*

Tartrates, (tar'trāts). [Tartaric, *q.v.*] Compounds of tartaric acid and bases.

Tartrelic acid, (tar-trel'ik). [Tartar, *q.v.*]= Iso-tartaric acid

Tarumas. An American race.

Taste, (tāst) [F. *tâter*, to try] The sensation excited in the mucous membrane of the tongue, probably exists only in Mammalia.

Tatouay, (tat'oo-ā) An animal belonging to Edentata=Dasypus tatouay.


Tatouay.

Taurin, (tau'rin) [L. *taurus*, bull] = $C_2H_7NO_3S$: a crystalline substance obtained from taurocholic acid.

Taurocholic acid, (tau-rō-kol'ik). [Gk, *tauros*, bull; *chole*, bile.]=Choleic acid = $C_{26}H_{45}NO_7S$: found in the bile of the ox, &c.

Taurus, (tau'rus). [The Latin name.]=The Bull: the second sign of the Zodiac, contains Aldebaran, the Pleiades, and the Crab cluster.


Taurus

Tawing, (taw'ing). [*Tawian*, the A.-S. word.] A process in tanning, in which alum and oil are incorporated with the hide.

Taxaceæ, (taks-ā'se-ē). [Taxus, *q v*]=Taxads =Yews: resinous trees and shrubs, with narrow leaves and naked flowers, forming a division of Gymnogens.

Taxodium, (taks-ō'di-um). [Taxus, *q.v.*] A plant belonging to Coniferæ. *T distichum* =Deciduous cypress

Taxonomic, (taks-on'ō-mik). [Taxonomy, *q.v*] Relating to arrangement or classification. *cf.* Ataxic.

Taxonomy, (taks-on'ō-mi). [Gk. *taxis*, arrangement; *nomos*, law] Principles of arrangement or classification.

Taxus, (taks'us). [Gk *toxon*, bow]=Yew: a plant belonging to Coniferæ, the wood is used for making bows

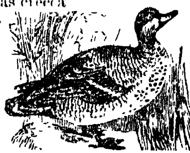
Taygete, (tā-ij'e-tē). [Classical] One of the Pleiades, *q v.*

Tea, (tē). [*Tsai*, the Chinese name.]=Thea, *q v.* *Paraguay T.*=Ilex Paraguayensis *Brazilian T'* = Stachytarpheta Jamaicensis. *Honey T.*, *c.* Honey tea.


Tea-plant

Teak, (tēk). [*Theka*, the Malabar name]=Tectona grandis an East Indian tree with very durable timber.

Teal, (tēl) [*Teeling*, the Dutch name] A duck-like bird=Anas crecca


Teal

Tealby series, (tēl'bi). [T in Lincolnshire] Beds of sand, without fossils, and clay and limestone with fossils, belonging to Middle Neocomian.

Tears, (tērz). [*Tær*, the A.-S. word] The overflow of the lachrymal secretion, which cannot be carried away by the lachrymal duct, excited by emotion or by strong odours.

Teat, (tēt). [*Tit*, the A.-S word] A small variety of the duck. *v.* Boscha.

Teazel (tē'zl). [*Tæsel*, the A.-S name.]= Dipsacus, *q.v.* *Fuller's T.*=Dipsacus fullonum.

Teazel-worts=Dipsacaceæ, *q.v.*

Tectibranchiata, (tĕk-ti-brang-ki-ā'ta) [L. *tecto*, I cover; Branchia, *q.v.*] A division of Gasteropoda, the animals of which have a shell, and the branchiæ are covered by the shell, or by a mantle.

Tectona, (tek'to-na). [The Latin name.]= Teak: a large tree, with long leaves, and hard durable timber, belonging to Verbenaceæ.

Teeth, (tēth). [Tooth, *q.v.*] Bony develop-

ments of the skin, found in the mouth of higher animals: used for prehension and mastication, classified as molars, premolars, canine, and incisors, *q.v.* Man has twelve molars, eight præmolars, four canine, and eight incisors. *Golden T.*, *v.* Golden teeth *Involute T.*, *v.* Involute teeth. *Laniary T.* =Canine T. *Milk T.*=Deciduous T.: temporary teeth appearing in infancy, and replaced by permanent teeth.

Teidæ, (tē′i-dē). [Teius, the typical genus, Gk *eidos*, form] A family of lizards.

Telegram, (tel′e-gram). [Gk. *tele*, far off. *gramma*, a writing] A message conveyed by means of telegraphic apparatus; especially one in which words are written by the apparatus or by hand.

Telegraph, (tel′e-graf). [Gk. *tele*, far off, *grapho*, I write] An apparatus for the rapid conveyance of intelligence, *cf.* Semaphore *Electro T.*, *v.* Electro-telegraph. *Morse's T.*, *v.* Morse's telegraph. *T. batteries*: usually Daniell's, Le Clanche, or Marie Davy's.

Teleology, (tel-e-ol′ō-ji). [Gk. *telos*, end; *logos*, discourse.] The science, or study, of final causes.

Teleosauria, (tel-e-ō-saw′ri-a) [Teleosaurus, *q.v.*] Extinct animals, of which the teleosaurus is the type

Teleosaurus, (tel-e-ō-saw′rus). [Gk. *teleos*, complete; *saura*, lizard.] A marine crocodile, known only by fossil remains in Oolite

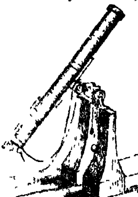
Teleostei, (tel-e-os′te-i). [Gk. *teleos*, perfect, *osteon*, bone.]=Bony fishes: a primary division of fishes, including most of the existing genera of bony fishes.

Telephone, (tel′e-fōn) [Gk. *tele-*, far off; *phone*, sound.] An apparatus by which sounds can be conveyed through long distances, being converted into electricity and reconverted into sound.

Telephoridæ, (tel-e-for′i-dē). [Gk. *tele-*, far off, *phoreo*, I carry] A family of insects, belonging to Lampyridæ, also called Soldiers and Sailors

Telerpeton, (tel-er′pe-ton). [Gk. *tele-*, far off, *herpeton*, reptile.] A reptile, known only by fossil remains found in Triassic rocks.

Telescope, (tel′es-kōp). [Gk. *tele-*, far off; *skopeo*, I view.] An apparatus for the better observation of objects at a distance, especially of celestial objects. *Astronomical T.*: adapted to observation of heavenly objects. *Catoptric T.* = Reflecting T., *q.v.* *Dioptric T.*= Refracting T., *q.v.* *Galilean T.*, *v.* Galilean telescope. *Gregorian T.*, *v.* Gregorian telescope. *Herschelian T.*, *v.* Herschelian telescope. *Newtonian T.*, *v.* Newtonian telescope.


Telescope

Telford's gradient. *v.* Gradient.

Tellurates, (tel′lū-rāts). [Telluric, *q.v.*] Compounds of telluric acid, with bases.

Telluretted hydrogen, (tel-lū-ret′ed). [Tellurium, *q.v.*]=Dihydric telluride = H_2Te: a combustible gas, with slightly acid properties.

Tellurethyl, (tel-ū-re′thil) [*Telluric* and *Ethyl*, *q.v.*]=$C_4H_{10}Te$: a feebly-acid gas, with fœtid odour.

Telluric, (tel-lū rik). [Tellurium, *q.v.*] Relating to tellurium, or containing it as an important constituent *T. acid*=H_2TeO_4: a crystalline substance. *T iron:* iron ore containing tellurium. *T. silver*=Hessite, *q v.*

Tellurides, (tel′lū-rīdz). [Tellurium, *q v.*] Rare substances, compounds of tellurium with another element.

Tellurites, (tel′lū-rītz). [Tellurous, *q v.*] Compounds of tellurous acid with bases.

Tellurium, (tel lū′ri-um.) [L. *tellus*, the earth.] =Te″· one of the sulphur group. a rare metallic-like substance, resembling sulphur in its properties. *Graphic T.*=Sylvanite.

Telostei=Teleostei, *q v.*

Telson, (tel′son) [Gk. *telson*, limit.] The centre of the terminal somite in Crustacea.

Tempera, (tem′per-a)=Distemper. Painting with opaque colours mixed with size. *cf.* Fresco. *v.* Painting.

Temperament, (tem′per-a-ment). A slight alteration in two musical notes very nearly alike so as to make one sound serve for both: as when F sharp and G flat are represented by the same sound.

Temperate, (tem′per-āt). [L. *temperatus*, moderate.] Moderate. *T. zones:* between the tropics and polar circles, *v.* Zones.

Temperature, (tem′per-ā-tūr). [L. *temperatus*, moderate.] Intensity of radiant heat. *v.* Thermometer.

Tempered. *T. steel:* steel hardened by being suddenly cooled when heated.

Temporal, (tem por-al) [L *tempora*, forehead.] *T fossa:* a hollow in which the temporal muscle lies.

Temporary stars; those which become visible for a time, usually by a temporary increase of brightness.

Tench, (tensh). [*Tinca*, the Latin name.]= Tinca, *q.v.*


Tench.

Tendo Achillis, (ten′dō ā-kil′lis). [The Latin name.] A tendon connecting the heel and calf of the leg.

Tendon, (ten′don). [L. *tendo*, I stretch.] Cords of fibrous tissue connecting the muscles with the bones, &c. *cf.* Ligament.

Tendrac, (ten′drak)=Tenrec, *q.v.*

Tendril, (ten′dril). [*Tendrillon*, the French word] Elongated thread-like processes of plants, especially of climbing plants, which twist round other plants, trellis-work, &c.

Tenebrio. *T. molitor:* flour beetle.

Tennantite, (ten′nan-tīt). [Tennant.] A variety of copper pyrites.

Tenrec, (ten′rek)=Centetes: a hedge-hog like animal belonging to Insectivora.

Tension, (ten′shun). [L. *tendo*, I stretch.] Expansibility, or elastic force, of gaseous bodies. *Electric T.*=Electro-motive force= Intensity of chemical action.

Tentacles, (ten'ta-klz). [Tentaculum, *q v.*]= Feelers; organs of sensations, sometimes also of prehension; in Cyanæa, 30 to 40 ft long.

Tentaculum, (ten-tak'u-lum). [The Latin word]=Feeler. *v.* Tentacles.

Tenthredo, (ten-thrē'do). [The Greek name] =Saw fly: an insect, the type of the family Tenthrinidinidæ, belonging to Hymenoptera

Tentorium,(ten-tō'ri-um). [L *tentorium*, tent] A membrane in the brain, dividing the cerebrum from the cerebellum.

Tenuirostres, (ten ū-i-ros'trēz). [L. *tenuis*, slender, *rostrum*, beak] Perching birds with slender beaks, forming a sub-division of Insessores, *q.v.*

Ter, (ter). [L. *ter*, thrice] A prefix implying three, as ter-steam in, ter-valent, &c.

Terbia, (ter'bi-a). A supposed metallic oxide =a compound of erbia and yttria.

Terbium, (ter'bi-um) [Terbia, *q.v.*] The supposed metallic base of terbia, *q v.*

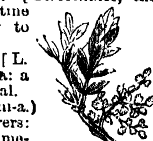
Terchloride, (ter-klō'rid). [Ter and Chloride, *q.v.*] = Trichloride: a compound of three atoms of chlorine with one of another element, as $SnCl_3$

Terebenes, (ter'e-bēnz). [Terebinth, *q v*]= $C_{10}H_{16}$= Camphogens, a group of isomeric hydrocarbons, of which oil of turpentine is the type, which, when combined with water, form crystalline camphor-like substances; also called Camphenes

Terebenthene, (ter-e-ben'thēn). [Terebinth, *q.v.*] A hydrocarbon found in oil of turpentine.

Terebic acid, (ter'e-bik). [Terebene, *q v.*]= $C_7H_{10}O_4$: a crystalline substance obtained by acting on rosin with nitric acid.

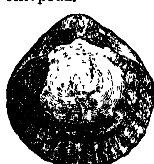
Terebinth, (ter'e-binth). [*Terebinthos*, the Greek name]=Turpentine tree: a tree belonging to Pistiaceæ.

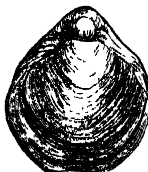

Terebinth.

Terebra, (ter'e-bra). [L. *terebro*, I bore.]=Subula: a boring molluscous animal.

Terebrantia,(ter-e-bran'shi-a.) [L *terebro*, I bore.]=Borers: insects belonging to Hymenoptera.

Terebratula, (ter-e-brat'ū-la). [L. *terebra*, borer.] Lamp-shell: a genus of marine brachiopoda.


Terebratula Fimbria.


Terebratula Carinata.

Terebratulidæ, (ter-e-bra-tū'li-de). [Terebratula, *q.v.*; Gk. *eidos*, form.] A family of animals belonging to Brachiopoda, of which the lamp-shell is the type: found from Devonian to present time.

Terecamphen, (ter-e-kam'fēn). [*Tere*bene and *Camphene*] $C_{10}H_{16}$: a white camphor-like substance, obtained from oil and turpentine.

Teredo, (te-rē'do). [*Teredo*, the Latin name] A molluscous animal belonging to Pholadidæ, a family of Lamellibranchiata. *T. navalis*= Ship-worm.

Tergal. (ter'gal) Related to the tergum, *q v*

Tergum, (ter'gum) [L. *tergum*, back.] In Crustacea, the convex upper plate of each segment.

Terminations. In chemistry, -*ic* (*e g.*, palladic, nitric, &c) is used to express the most highly oxidised compound of a series, and -*ous* for the next less highly oxidised compound of the same series; *e g.*, palladious, nitrous, &c.

Termes, (ter'mēz). [L. *tarmes*, a wood worm] =White ants: insects belonging to Neuroptera. *v.* Ternites.

Terminology, (ter-min-ol'ō-ji). [L *terminus*, term, Gk. *logos*, discourse.] The science of technical terms.

Termitarium, (ter-mi-tā'ri-um). [Termes, *q v.*] Dwelling of a colony of termes, or white ants.

Termites, (ter'mi-tēz). [Termes, *q.v*]=White ants. small soft-bodied insects, living in communities, belonging to Neuroptera.

Termitinæ, (ter-mi-tī'nē). [Termes, *q.v*]= Corrodentia. a division of Neuroptera, including white ants.

Tern, (tern). [*Terne*, the Danish name]= Sterna hirundo· a bird belonging to Natatores; also called Sea-swallow.

Ternate, (ter'nāt). [L *terni*, three each.] Three-fold· triple. *T. leaf*· a compound leaf having three leaflets.

Ternstromiaceæ, (tern-strō-mi-ā'se-ē). [Ternström, a botanist.]=Theads=Tea, &c : trees and shrubs, with leathery leaves, belonging to Guttiferales.

Terpine, (ter'pēn). [Terebene, *q v*]= $C_{10}H_{16}2H_2O$=a variety of hydrated oil of turpentine.

Terpinol, (ter'pi-nol). [Terebene, *q.v.*]= $C_{20}H_{32}.H_2O$=a variety of hydrated oil of turpentine.

Terra cotta, (ter'ra kō'ta). [The Italian name.] Baked clay. used for pottery, small statuary, &c.

Terrapin, (ter'ra-pēn). [*Terrapene*, the French name]=Emys, *q v.*

Terrestrial. (ter-res'tri-al). [L. *terra*, earth.] Related to the earth.

Terrier, (ter'ri-er). [The French name] A variety of the dog, characterised by its courage and antipathy to vermin.


Scotch Terrier.

Tertians,(ter'shi-anz). [L. *tertius*, third] Curves of third degree.

Tertiary,(ter'shi-a-ri). [L. *tertius*, third.] =Cainozoic: a general term for all the rocks between Secondary and Recent, now includes Eocene, Miocene, and Pliocene, originally given to alluvial and similar beds. *T. colours*

=Primary hues: made by union of secondary colours, a general term=third.

Tesselated, (tes-se-lā'ted) [L. *tessella*, small cube.] Formed in small squares like a chess-board, also used generally for patterns in tile work.

Test, (test) [1. The French word, 2 L. *testa*, shell.] 1 A substance used to detect the presence of some given supposed constituent in a chemical compound, also called Re-agent. 2. A shell or thick covering, *v.* Testacea.

Testacea, (tes tā'se-a). [L. *testa*, shell.] Mollusca having shells.

Testudo, (tes-tū'do) [The Latin name.]= Tortoise: an animal belonging to Chelonia, *q.v.*

Tetanus, (tet'a-nus). [Gk *teino*, I stretch] 1 A general term for a convulsive affection of the muscles of volition 2 =Locked-jaw: an affection of the muscles of the lower jaw which prevents mastication and swallowing.

Tethys, (tē'this) [Classical] A star

Tetra- (tet'ra). [Gk. *tetra-*, four.] A prefix implying four.

Tetrabranchiata, (tet-ra-brang-ki-ā'ta). [Gk *tetra-*, four, *bragchia*, gill.] Molluscs having four gills, a less highly organised division of Cephalopoda, having numerous arms, but no suckers or ink-bag.

Tetrachlorides=Compounds of four atoms of chlorine with one atom of a metal.

Tetracrylic acid=$C_4H_6O_2$=Solid crotonic acid.

Tetrad, (tet'rad) [Gk. *tetra*, four.] A chemical element, one atom of which is equivalent, in combination, to four atoms of hydrogen.

Tetradecapoda, (tet-ra-de-kap'o-da). [Tetra and Decapoda, *q.v.*] De Blainville's term for Amphipoda and Isopoda

Tetradymite, (tet-rad'i-mit) [Gk *tetradymos*, fourfold.] A mineral, chiefly telluride of bismuth and sulphur.

Tetragon, (tet'ra-gon). [Gk. *tetra-*, four; *gonia*, angle.] A four-cornered figure: especially a square



Tetragoniaceæ, (tet-ra-gon-i-a'se-ē). [*Tetragonia*, the typical genus] = Aizoons: herbs, with succulent leaves, belonging to Ficoidales.

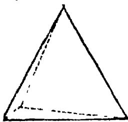


Tetragons.

Tetragonolepis, (tet-ra-gon-ol'e-pis). [Gk. *tetra*, four, *gonia*, angle, *lepis*, scale.] A ganoid fish found fossil in Lias rocks.

Tetrahedron, (tet-ra-hē'dron). [Gk. *tetra-*, four, *hedra*, face.] A solid figure bounded by four triangular surfaces.

Tetrao, (tet'ra-ō). [The Greek name.] = Grouse: a bird, the type of Tetraonidæ, *q.v.*



Tetrahedron.

Tetraonidæ, (tet-ra-on'i-dē). [Tetrao, *q v.*, Gk. *eidos*, form.] A family of birds belonging to Rasores, including the grouse, ptarmigan, &c.

Tetratomic. *v.* Tetrads.

Tetryl, (tet'ril). [Tetrylic, *q.v.*]=C_8H_{18}= Butyl=Ditetryl: a liquid hydrocarbon obtained by the distillation of coal, and from potassic valerate, &c

Tetrylene, (tet'ri-lēn). [Tetrylic, *q v.*]=C_4H_8 =Butylene=Oil gas: a gaseous hydrocarbon of the Olefine series, first obtained by the distillation of oil.

Tetrylia, (tet-rī'li-a). [Tetrylic, *q.v.*]=$C_4H_{11}N$. an alkaline base obtained from tetryl alcohol:

Tetrylic, (te-tril'ik). A new name for butylic.

Teucrium, (tū'cri-um) [Teucer.]=Germander: an herb belonging to Lamiaceæ. *T. scorodonia* =Wood sage

Teuthidæ, (tū'thi-dē). [Gk. *teuthis*, sleeve-fish; *eidos*, form] Calamaries: a sub-division of Sepiadæ.

Textile, (teks'tīl). [*Textilis*, the Latin word] Woven *T. fabrics:* cotton, linen, woollen, and other cloths formed by weaving.

Thalamifloræ, (thal-a-mi-flō're). [Thalamus, *q v.*] Plants having the stamens free from the calyx and generally inserted on a receptacle or disc

Thalamus, (thal'a-mus). [Gk. *thalamos*, bridal chamber.] The portion of a flower stem from which the calyx, corolla, &c., grow out.

Thalassicolla, (thal-a-sik'ol-a) [Gk. *thalassa*, sea; *kolla*, glue.]=Transparent, colourless, gelatinous masses, found floating in sea water, belonging to Protozoa.

Thalictrum, (thal-ik'trum). [*Thaliktron*, the Greek name.] An herb belonging to Ranunculaceæ.

Thallious, (thal'li-us). [Thallium, *q.v.*] Related to thallium, *q.v.*

Thallium, (thal'li-um). [Gk. *thallos*, a green twig]=Tl': a heavy lead-like, diamagnetic metal, named from a brilliant green line in its spectrum; found in iron pyrites.

Thallogens, (thal'lo-jenz). [Thallus, *q v.*]= Fungi, lichens, &c : flowerless plants, of cellular structure, having no proper stem.

Thallophytes, (thal-lō-fī'tēz). [Gk. *thallos*, green twig, *phyton*, plant] Cryptogamous plants in which the stem and foliage are not distinct.

Thallus, (thal'lus). [The Latin word.] The portion of a flowerless plant which produces the reproductive organs.

Thanatophidia, (than-a-to-fid'i-a). [Gk. *thanatos*, death; Ophidia, *q.v.*] Poisonous snakes of India.

Thanet beds, (than'et). [Isle of Thanet.] The lowest of the Lower Eocene strata, resting on the chalk.

Thapsia, (thap'si-a). [Gk. *thapto*, I bury.]= Deadly carrot: a plant belonging to Apiaceæ.

Thaumatrope, (thaw'ma-trōp). [Gk. *thauma*, wonder, *tropeo*, I turn.] An optical apparatus, in which a number of figures pass rapidly before the eye, and appear like one in which the parts are in motion.

Thaumops. [Gk. *thaumnops*, strange face] An amphipod crustacean, discovered in 1873.

Thea, (tē'a). [*Tsai*, the Chinese name.]=Tea-plant: a plant belonging to Ternstrœmiaceæ.

Thebaia=$C_{19}H_{21}NO_3$=Paramorphia: an alka-

line, poisonous, crystalline base, obtained from opium.

Thebit. A crater, 32 miles in diameter, in the Moon

Theca, (thē'ka). [Gk *theke*, sheath] 1. A pteropod animal, known by fossil remains in Silurian rocks 2. In ferns=Sporangium: the case containing the spores; generally a strong fibrous case enclosing a soft body.

Thecaphora, (thē-kaf'ō-ra). [Gk *theke*, sheath, *phoreo*, I bear.]—Sertularidæ, *q.v.*: a subdivision of Hydrozoa.

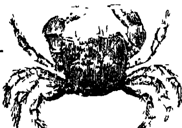
Thecidium, (thē-sid'i-um) [Gk. *thekidion*, small sheath] A molluscous animal, known by fossil remains in Trias rocks.

Thecodont, (thek'ō-dont). [Gk. *theke*, case, *odous*, tooth.] *T. teeth:* teeth that are fixed in alveoli or sockets.

Thecodontosaurus, (thek-o-don-tō-sau'rus). [Thecodont, *q v.*: Gk. *saura*, lizard] A reptile, known only by fossil remains found in Triassic rocks, named from its thecodont teeth.

Theine, (thē'in) [Thea, *q v.*]=Caffeine, *q v.*

Thelphusidæ, (thel-fu si-de). [Thelphusa, the typical genus; *eidos*, form] A family of crab-like animals belonging to Brachyura.

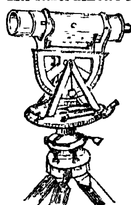

Thelphusian.

Thenard (tā'nard). [M. Thenard.] *T.'s blue:* a pigment deriving its colour from cobalt.

Theobroma, (thē-o-brō'ma). [Gk. *theos*, god; *broma*, food.] A tree belonging to Sterculiaceæ, from which cocoa is obtained. *T. cacao* =Chocolate nut tree.

Theobromine, (the-o-brō'min). [Theobroma, *q.v.*]=$C_7H_8N_4O_2$: an alkaline base found in chocolate.

Theodolite, (thē-od'ō-līt). An instrument for the measurement of horizontal angles, consisting essentially of a telescope mounted so as to move on a pivot both horizontally and vertically.


Theodolite.

Theophilus. A crater, 64 miles in diameter, in the Moon.

Theorem, (thē'ō-rem). In mathematics, a truth which is proved by reference to already admitted truths.

Thermal, (thėr'mal). [Gk. *therme*, heat.] Relating to heat. *T. unit:* in Britain, the quantity of heat required to raise one pound of water from 0° to 1° centigrade; in France, the quantity required to raise one kilogramme of water the same.

Thermo-, (thėr'mō). [Gk. *thermos*, heated.] A prefix implying some relation to heat

Thermochrosis, (thėr-mō-krōs'is) [Gk. *thermo*, heated; *chros*, colour.]=Heat tint: coloration by heat.

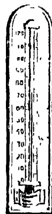
Thermo-dynamics, (thėr-mō-dī-nam'iks.) [Thermo and Dynamics, *q.v.*] The science of the relations of heat and work.

Thermo-electric, (thėr-mō-e-lek'trik) [Thermo and Electric, *q.v*] Related to thermo-electricity *T. current* produced when two metals having different capacities for heat are joined, and warmed at one end while the opposite end is cooled. *T battery* a number of thermo-electric couples *T. series:* metals arranged in order of their capacity to generate a thermo-electric current when heated.

Thermo-electricity, (thėr-mō-e-lek-tris'i-ti). [Thermo and Electricity, *q.v.*] Electricity generated by the action of heat, or derived from heat

Thermograph, (thėr'mō-graf). [Thermo, *q v*; Gk *grapho*, I write] A record, usually automatic, of the variations of temperature.

Thermometer, (thėr-mom'e-tėr). [*Thermos*, heated, Gk. *metron*, measure] An instrument for measuring the rise and fall of temperature, usually by means of the expansions and contractions of mercury, as indicated by the rise and fall of a fine column of the metal in a glass tube. *Maximum and minimum T:* one which registers the highest and lowest temperatures in a given period. *Differential T*, *v* Differential thermometer. *Breguet's T*, *v.* Breguet's thermometer.


Thermometer

Thermometric, (thėr-mō-met'rik). [Thermometer, *q v.*] Related to the thermometer. *T. scales*, *v.* Celsius, Centigrade, Fahrenheit, and Reaumur

Thermopile, (thėr'mō-pīl) [Thermo, *q v*, and Pile.]=Thermo-electric battery, *q v*

Thermopegology, (thėr-mō-pē-gol'ō-ji). [Gk. *thermos*, hot, *pege*, spring, *logos*, discourse.] =Science of the phenomena of hot springs, geysers, &c.

Thiacetic acid, (thī-a-sē'tik). [Gk *theion*, sulphur; Acetic, *q v*]=C_2H_4OS. a liquid obtained by the action of sulphide of phosphorus on acetic acid.

Thialdine, (thī'al-din). [Gk. *theion*, sulphur.] =$C_6H_{13}NS_2$: an alkaline base obtained by the action of sulphuretted hydrogen on aldehyde of ammonia

Thigh, (thī) [*Theoh*, the A.-S. word.] The upper portion of the leg, above the knee.

Thio- (thī'o). [Gk. *theion*, sulphur] A prefix implying the presence of sulphur as an important constituent of a compound.

Thiobenzol, (thī-ō-ben'zol). [Thio and Benzol, *q v.*]=$3C_7H_6S$=Benzoyl hydride in which the oxygen has been replaced by sulphur.

Thioformic acid, (thī-ō-for'mik). [Thio and Formic, *q v*]=CH_2SO. formic acid in which part of the oxygen has been replaced by sulphur.

Third. In music, the interval between any note and the one two notes higher. *Major T.*=Two whole tones *Minor T.*=A tone and a half; *e g.*, from A to C is a minor third, from C to E is a major third.

Thistle, (this'l) [*Thistel*, the A.-S. word.]=Carduus: a plant belonging to Asteraceæ. *Cotton T.*=Onopordon. *Plume T.*=Cnicus. *Sow T.*=Sonchus. *Star T.*=Centaurea calcitrapa.


Thistle

Thlaspi, (thlas'pi). [Gk. *thlao*, I compress.]=Penny Cress, an herb, belonging to Brassicaceæ. *T. arvense*=Mithridate mustard.

Thomson's electrometer. [Sir W. Thomson.] A combination of a Leyden jar and a suspended needle, the deflection of which is the measure of electrical tension.

Thomson's galvanometer. Its indications are given by reflection on a graduated scale, of a ray of light.

Thoracic duct, (thō-ră'sik). [Thorax, *q.v.*] The main trunk of the lymphatic system, a large tube in front of the back bone.

Thorax, (tho'raks). [Gk. *thorax*, breast-plate.] 1. In insects, the three segments supporting the leg. 2.=The chest.

Thorina, (thō-ri'na). [Thorite, *q.v.*]=ThO_2=Dioxide of thorinum.

Thorinum, (thō-ri'num). [Thorina, *q.v.*]=Th: a rare metal obtained from thorite; also called Thorium.

Thorite, (thō'rit). [Thor, a Norwegian deity.] A resinous mineral, from which thorinum is obtained.

Thorn, (thorn) [The A.-S. name.] A general term for hawthorn and white thorn *v.* Cratægus. *T. apple*=Datura. *T. back*=Raia clavata: a fish.


Thornback

Thorough-base. A method of writing a harmony, in which the notes of one part only are written, the relations of the other parts to this base being expressed by figures.

Thousand-legs=Millipedes, *q.v.*

Thread, (thred) [*Thræd*, the A.-S. name.] *T. cells:* thread-like stinging processes found in Hydrozoa, &c. *T. worms*=Nematoidea, *q.v.* *T. of screw:* the projecting worm-like portion.

Three-fourth oxides. Of the type R_3O_4 in which three atoms of a metal combine with four atoms of oxygen.

Three, Rule of=Proportion. An arithmetical process by which the fourth of a series of four proportional numbers is found when the other three are given.

Thrift, (thrift)=Armeria maritima: an herb belonging to Plumbaginaceæ.

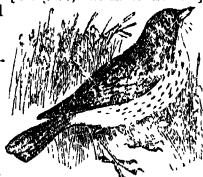
Thrips, (thrips). An insect, the type of Physopoda, *q.v.*=Thysanoptera.

Throstle, (thros'l). [1. The A.-S. word; 2. Named from its sound when working.]=Song-thrush=Turdus musicus. *T. frame*=Water-spinning frame.

Throttle valve. A valve working in a pipe, so as to regulate the quantity of steam, water, &c., passing through in a given time.

Throw=Fault, *q.v.*

Thrush, (thrush). [*Thrysce*, the A.-S. name.]=Turdus: a small bird belonging to Merulidæ. *Song T.*=Turdus musicus, also called Throstle. *T. fungus*=Oidium albicans: found in infantile disease of the thrush.


Thrush.

Thrutchers. Auxiliary high pressure non-condensing engine.

Thuban=*α* Draconis: formerly the brightest star in the constellation, now of only third magnitude. Some 5000 years since it was the pole-star.

Thuja, (thu'ja) [Gk. *thyon*, odour.] A tree belonging to Coniferæ, also called Arbor Vitæ.

Thumb, (thum) [*Thuma*, the A.-S. word.]=Pollex: opposable in man, monkeys, and lemurs.

Thunder, (thun'der) [The A.-S. word.] An explosive sound sometimes following lightning.

Thuringite. An ore of iron.

Thuya, (thū'ya)=Thuja, *q.v.*

Thuytes, (thī'tēz). [Thuja, *q.v.*]=Thuites: a coniferous plant, known by fossil remains found in Oolitic rocks.

Thwaites' fluid. For preserving animal substances: a compound of water, alcohol, creosote, and chalk.

Thylacine, (thī'la-sin) [Gk. *thylakos*, pouch; *kyon*, dog.] The most carnivorous of marsupialian animals. *T. cynocephalus*=Tasmanian wolf.

Thylacotherium, (thī-la-kō-thē'ri-um)=Amphitherium: an extinct maruspial animal.

Thymallus. A salmon-like fish belonging to Salmonidæ. *T. vulgaris*=Grayling.

Thyme, (tim). [Thymus, *q.v.*]=Thymus, *q.v.* *Oil of T.:* a compound of thymol and thymene, *q.v.*

Thymelaceæ, (tī-me-lā'se-ē). [Thymelæa=Daphne.]=Daphnads: shrubs, with caustic bark, belonging to Daphnales.

Thymene, (tī'men). [Thymus, *q.v.*]=$C_{10}H_{14}$: a solid crystalline hydrocarbon found in oil of thyme.

Thymol, (tī'mol). [Thymus, *q.v.*]=Oxidised thymene=$C_{10}H_{14}O$ *v.* Thymene.

Thymus, (tī'mus). [The Greek name.]=Thyme: a small fragrant herb, belonging to Lamiaceæ. *T. gland:* at the base of the heart; gradually disappears with age.

Thyroid, (thī'roid). [Gk. *thyra*, door; *eidos*, form.] *T. gland:* below the larynx, the use of which is not clearly known. *T. cartilage:* a V-shaped piece of gristle partially enclosing the glottis, and attached to the top of the windpipe; also callad Adam's apple.

Thysanoptera, (thī-san-op'te-ra). [Gk. *thy-*

sanos, fringe, *pteron*, wing]=Thrips: minute insects, forming a sub-division of Mandibulata

Thysanura, (thī-sa-nū'ra) [Gk. *thysanos*, fringe; *oura*, tail] Ametabolous insects, with scaly bodies, biting jaws, and no wings, named from having fringed appendages.

Tibia, (tib'i-a). [The Latin name.] The shin-bone.

Ticks, (tiks). [*Tique*, the French name.] Small spider-like animals belonging to Trachearia

Tidal air. The air which passes in and out in breathing=about 25 cub. in at each breathing

Tides, (tidz). [*Tīd*, the A.-S. name.] Movements by which the level of the sea is constantly changing, rising in one place and falling in another. *Neap T.* = Low tides. *Spring T.*=High tides.

Tiger, (tī'ger). [*Tigris*, the Latin name]= Felis tigris: a carnivorous animal belonging to Felidæ, *q.v.* *Camel T.* = Maneless lion. *T. beetles*=Cicindelidæ: a family of insects belonging to Coleoptera. *T. bittern*=Tigrisoma, *q.v.* *T. sharks*=A variety of the shark, found near Norfolk Island

Tigrisoma, (tī-gri-sō'ma) [L. *Tigris*, tiger; Gk. *soma*, body]=Tiger-bittern. A bird belonging to Ardeidæ.

Tiles, (tilz). [L. *tegula*, roofing-tile] Thin plates of baked clay, used for roofs and pavements, &c.

Tilestones. Beds of sandstones and grits, belonging to Upper Ludlow formations.

Tilia, (til'i-a). [The Latin name]=Lime-tree =Linden: a tree, the type of Tiliaceæ.

Tiliaceæ, (til-i-ā'se-ē). [Tilia, *q.v.*]=Linden-blooms: shrubs and trees, with tough inner bark, belonging to Malvales.

Till, (til). A tough, stony, unstratified clay rock, characteristic of the Lower Drift, usually inland: implying the existence of intense cold at the time of formation

Tillandsia, (til-land'si-a). [Prof. Tillands, of Sweden.] A plant belonging to Bromeliaceæ. *T. utriculata*=Wild pine of Jamaica.

Tilt. *T. hammer*: a large hammer, tilted up by machinery. *T. steel* = Forged steel= Hammered steel.

Timber, (tim'ber). [*Timbor*, the A.-S. name] *Kinds of T.*: planks, 11 inches wide; deals, 9 inches wide, battens, 7 inches wide.

Timbre, (tim'br). [The French word.] The peculiar quality of a note, which distinguishes any given note on one instrument from the same note on another.

Time, (tīm). [*Tima*, the A.-S. word] *Sidereal T.*: reckoned with reference to the position of the first point of Aries. *Solar T.*: 1. *Apparent S. T.*: reckoned with reference to the position of actual Sun, 2 *Mean S. T.*: reckoned with reference to the position of Mean Sun. *T. ball*: one which is let fall, down a staff, at some observatories, usually at 1 P.M., as a standard of time. *T. measure*, v. Tables. *T. fuze*: a tube filled with nitre, gunpowder, &c., which burns at the rate of 1 inch in 5 seconds, so that a shell can be exploded at any given time after discharge.

Timorese. An Oceanic race.

Timothy-grass. [Mr. *Timothy* Hanson.] = Phleum pratense.

Tin, (tin). [The A.-S. word]=Sn: one of the Silicon-group of elements, a soft white, brilliant, malleable metal, much used as a protective coating for more oxidisable metals, and as an ingredient in pewter, bell-metal, bronze, &c. *Alloys of T.*: Britannia metal, pewter, Queen's metal, solder, bronze, &c. *T. pyrites*=Tin ore: chiefly sulphide of tin, with copper and iron.

Tinca, (tin'ka) A fish belonging to Cyprinidæ. *T. vulgaris*=Tench

Tincal, (ting'kal). [*Tinkal*, the Malay name.] =Borax, *q.v.*

Tinctures, (ting'tūrz). [*Tinctura*, the Latin word] Coloured solutions of animal and vegetable principles.

Tinnunculus, (tin-nung'kū-lus). A bird belonging to Falconidæ. *T. alaudarius*=Kestrel.

Tint, (tint). [L. *tinctus*, tinged.] Intensity of colour. *cf.* Hue

Tipulidæ, (tip-ū'li-dē) [Tipula, the typical genus; Gk. *eidos*, form.] = Crane-flies: a family of insects belonging to Diptera.

Titania, (ti-tā'ni-a) A satellite of Uranus.

Titanic acid, (ti-tan'ik). [Titanium, *q.v.*]= TiO_2: peroxide of titanium, also called Rutile and Titanite.

Titanite, (tī'tan-īt) A mineral, composed chiefly of titanic acid, also called Rutile

Titanium, (ti-tā'ni-um)=Ti: one of the silicon group of elements. A rare metal

Tit. *T. lark*=Anthus pratensis: a lark-like bird, also called Meadow pipit. *T. mouse*= Parus a bird, the type of Paridæ. *T. warbler*=Sylvicola minuta.

Tits=Paridæ, *q.v.*

Toad, (tōd) [*Tadie*, the A.-S. word.]=Bufo =Rana bufo: a small amphibious animal, belonging to Batrachia. *Great T.*=*Surinam T.*=Pipa Americana *Indian T.*=Glyphoglossus, *q.v.* *T. flax*=Linaria, *q.v.* *T. stools* =Hymenomycetes, *q.v.*

Toads=Bufonidæ. A family of amphibous animals, belonging to Batrachia

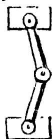
Toad's-eye tin. A variety of wood-tin; found in small spherical masses

Tobacco, (tō-bak'kō) [*Tabaco*, the Indian name] Foliage of Nicotiana, used for smoking, has narcotic properties *Garden T.*= Arnica montana. *Indian T.* = Cannabis Indica. *Powdered T.*=Snuff

Toddy, (tod'di). A fermenting drink: the sweet juice of the cocoa-nut trees. *T. bird*= Baya sparrow, found in India and Ceylon.

Toe. (tō) *Great T.*=Hallux.

Toggle-joint, (tog'l). Knee-joint: a bar jointed in the middle.


Toggle-joint.

Toise. *v.* Length.

Tolmen, (tol'men) [Celt. *daul*, table; *maen*, stone.]=Dolmen, *q.v.*

Toluic acid, (tol'ū-ik) [Toluol, *q.v.*]= $C_8H_8O_2$, also called Toluylic acid

Toluidine=Benzylamine = Toluylia, *q.v.*

Toluol, (tol'ū-ol)=C_7H_8= Benzoene= Retinaphtha, a liquid hydrocarbon obtained from coal-tar.

Toluylia, (tol-ū-il'i-a). [Toluol, *q.v.*]=C_7H_9N =Toluidine: a fusible crystalline solid, one of the aniline bases.

Tolyl =Benzyl, *q.v*

Tomatoes, (tō-ma'tōz). Fruit of Solanum lycopersicum, also called Love-apples.

Tomentose, (to-men'tōs). [L *tomentum*, stuffing of a cushion.] Downy: covered with hairs.

Ton, (tun). [L. *tonna*, large cask] 1=20 hundredweight=2240 lbs. avoirdupoise 2. A measurement of the capacity of a vessel for cargo = 40 cubic feet

Tone, (tōn) [Gk *tonos*, a sound.] The interval between one musical note and the next above or below it. *Harmonic T.*, *v.* Harmonic tones. *Over T.*, *v* Overtones *Semi-T* = Half a tone, *e.g.*, the interval between B and C, and between E and F.

Tones. 1, *v.* Tone. 2 Colours mixed with white.

Tongue, (tung) [*Tunge*, the A.-S. word] A very sensitive muscular extensile body at the base of the mouth in man: the chief means of speech; used also for taste. In some frogs fastened only to the front of the mouth, in some birds horny, and in some fishes covered with teeth *Ox T.* =Helminthia. *Snake's T.* = Ophioglossum.

Tonic, (ton'ik). [*Tonikos*, the Greek word.] 1 =Key note the chief note of a musical scale. 2 A medicine which strengthens.

Tonka bean=Tonquin bean, *q v.*

Tonquin bean=Dipterix odorata=Coumarouma odorata.

Tonsils, (ton'silz) [*Tonsillæ*, the Latin word.] Two glands at the back of the mouth, near the fauces

Tooth, (tōoth) [*Toth*, the A S. word.] Singular of teeth, *q v.* *T. wort* Lathræa, *q.v.*

Top. *T. shells*=Turbinidæ, *q.v*

Topaz, (to-paz). [*Topazos*, a Red Sea island] A mineral substance, chiefly silicate of alumina, crystallising in rhombs. *Blue T.*= Brazilian sapphire *Crimson T* = Topaza pella. a humming bird. *False T.*=Citrine, *q. v* *T group of minerals* includes topaz, andalusite, beryl, tourmaline, and olivine

Topography, (tō-pog'ra-fi) [Gk. *topos*, place, *grapho*, I write] Description of places, such as towns, villages, castles, &c , as distinct from geography, *q v*

Toque= Macacus. a monkey named from having a cap of hair

Tor, (tor). [The A.-S. word.] A local west of England term for a large block of rock which has assumed some special shape owing to the action of the weather.

Tordylium, (tor-dil'i-um). [*Tordylion*, the Greek name.]=Hart-wort: a plant belonging to Apiaceæ.

Torilis, (to-rī'lis). Hedge-parsley: a plant belonging to Apiaceæ.

Tornado, (tor-nā'dō). [Sp. *tornada*, return.] A whirlwind of short duration, and usually covering only a limited area.

Torpedo, (tor-pē'dō). 1. An apparatus for exploding under water. 2 =Raia torpedo: a fish belonging to Raiidæ, which has the property of giving electric shocks.

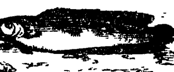

Torpedo, or Cramp-fish

Torricelli's experiment, (tor-ri-chel'liz). [Prof. Torricelli.] The inversion in mercury of a tube filled with mercury, when the column of mercury falls until its weight is equal to the pressure of the air without.

Torricellian vacuum, (tor-ri-chel'li-an). [Prof. Torricelli.] The vacuum in the upper part of the tube, when the above experiment is tried partially filled with the vapour of mercury.

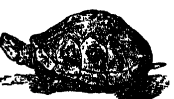
Torrid, (tor'rid). [L. *torridus*, dried up.] Hot: parched. *T. zone:* between the tropics, *v.* Zones.

Torsion, (taur'shun). [L. *torqueo*, I twist.] Force of twisting *T balance* used to measure the intensity of magnetic, electric, &c , attractions and repulsions; *e g* , a magnetised needle is moved by twisting its suspending thread to the right or left, and the amount of torsion required is the measure of the intensity of the attraction or repulsion to be overcome.


Torsk

Torsk, (taursk) = Brosmius a cod-like fish belonging to Gadidæ.

Tortoise, (tor'tis) [L. *tortus*, twisted.]=Testudo an animal belonging to Chelonia, *q.v.* *Box T* =Testudo Carolina *Mud T.* = Kinosternon Pennsylvanicum. *Lettered T* =Emys scripta *T encrinite* =Marsupites: crinoidea found in chalk.


Tortoise

Tortoises. *Land T* . Testudinidæ. *Mud T.*= *Soft T* =Trionycidæ: carnivorous fresh-water tortoises

Tortoise-shell. Horny plates: modifications of skin in tortoises. *T. butterfly*=Vanessa.

Tortrix, (taur'triks). 1 A snake having rudimentary hind limbs, the type of the family Tortricidæ 2 A moth, of which the hazel moth and oak moth are examples.

Torula, (tor'ū-la). [L. *torulus*, a small twisted fillet] A microscopic fungus causing mouldiness, belonging to Coniomycetes. *T. casei*= Cheese mould.

Torvulæ=Mycoderma, *q.v.*

Torus, (tō'rus). [L. *torus*, swelling.] 1. Receptacle, *q.v.* 2. A moulding.

Total. *T. reflection:* an example of refraction, when the ray is refracted back again through the same medium. *v* Critical angle.

Totipalmes, (tō-ti-pām'ēz). [L. *totus*, all: *palma*, palm of hand] A general term for birds whose toes are all connected by a membrane: includes cormorants, pelicans, &c , and forms a sub-division of Natatores.

Toucan, (too'kan). [The Spanish name.]= Rhamphastus: a bird, with very large beak, belonging to Scansores.


Toucan

Toucana,(too-kā'na). [Latin form of Toucan, *q. v.*] = The American Goose: a small constellation near the south pole, of which Achernar is the chief star.

Touch, (tuch). [*Toucher*, the French word.] Sensation of contact, of which the skin is the chief organ. *T. animals*, *v.* Oken. *T. paper* which burns slowly from being dipped in a solution of nitre.

Touch-me-not=Impatiens noli-me-tangere; a sensitive plant.

Touracou, (too-rā'kō). = Plantain eater: an African bird whose red feathers give to water a rose colour.

Tourmaline, (tōōr'ma-lin). [*Tournamal*, the Cingalese name.] A mineral of the topaz group, chiefly a silicate of alumina, iron, &c.; when pure brilliantly transparent, it absorbs the ordinary ray of a doubly-refracted ray of light. *Black T.*=Schorl. *Blue T.*=Indicolite.

Tournefourt's classification of plants (1684). According to the Corolla.

Apetalous.
  Apetalæ proper.
  Amentaceæ.
Petalous.
  Monopetalous.
  Polypetalous.

Tourniquet, (toor'ni-ket). [The French name.] A bandage applied to prevent the flow of blood through an artery, as in surgical operations. *Hydraulic T.*, *v.* Hydraulic tourniquet.

Tow,(tō) [The A.-S. word.] Coarse hemp or flax.

Toxodon, (toks'o-don). [Gk. *toxon*, bow; *odous*, tooth.] An animal, known only by fossil remains, supposed to connect Rodentia with Pachydermata and Cetacea by possessing some of the characteristics of each, the type of Toxodontia.

Toxodontia, (toks-ō-don'shi-a). [Toxodon, *q. v.*] Large fossil ungulate animals, known by fossil remains found in Pliocene rocks.

Toxotes, (toks'o-tēz). [Gk. *toxon*, bow.]= Archer fish, *q. v.*

Trabeculæ, (tra-bek'u-lē). [L. *trabecula*, small beam.] Cartilaginous bars in the skull, when in the embryo condition, enclosing the "Turkish saddle."

Tracery, (trā'ser-i). Ornamental work in the head of a Gothic window, door, panel, &c.

Trachea, (trak'e-a). [Gk. *tracheia*, windpipe.] =Windpipe=Air tube; in higher animals the tube leading to the lungs; in insects the tubes conveying air throughout the body.

Tracheal animals. Oken's term for insects.

Trachearia, (trak-e-ā'ri-a). [Gk. *trachea*, windpipe.] A primary division of Arachnida, including mites, ticks, &c., which respire generally by means of tracheæ.

Tracheata, (trak-e-ā'ta). [Gk. *trachea*, windpipe.] A sub-division of Arthropoda, including Insects, Myriapoda, and Arachnida.

Tracheotomy, (trak-e-ot'om-i). [Trachea, *q. v.*; Gk. *tome*, cutting.] In surgery a cutting into the trachea.

Trachymedusæ, (trak-i-me-dū'sē). [Gk. *trachys*, rough; Medusa, *q. v.*] A sub-division of Hydrozoa, *q. v.*

Trachyte, (trā'kit). [Gk. *trachys*, rough.] A coarse volcanic rock, chiefly felspar, less compact than porphyry.

Trachypterus, (trak-ip'ter-us). [Gk. *trachys*, rough, *pteron*, fin.] *T. bogmarus*=Deal fish, *q. v.*

Trachytic rocks, (tra-kit'ik). [Trachyte, *q. v.*] A division of trappean or volcanic rocks, somewhat resembling granite, compound chiefly of silica.

Track=Spoor. *T. discovered animals*=Ichnozoa, *q. v.*

Trade-winds. Constant winds, always blowing in the same direction. *North T. W.* between 9° and 30° in Atlantic, between 9° and 26° in Pacific. *South T. W.* between 4° and 22° in Atlantic, between 4° and 23° in Pacific.

Tragacanth, (trag'a-kanth). [Gk. *tragos*, goat; *akantha*, thorn.] A gum obtained from the plant astragalus, also called Gum-dragon and Bassorin.

Tragopogon, (tra-go-pō'gon). [Gk. *tragos*, goat, *pogon*, beard.]=Goat's beard: a milky herb belonging to Cichoraceæ. *T. porrifolius*= Salsify.

Tragulidæ, (trag-ū'li-dē). [Gk. *tragos*, goat.] Extinct hornless mammalians.

Trammel, (tram'ml). [F. *trois*, three, *mailles*, meshes.] A loose net of small meshes between two tighter nets of large meshes.

Tram-weavers=Labyrinthulæ, *q. v.*

Transcalent, (trans-kā'lent). [L. *trans*, across; *calor*, heat.]=Diathermic: allowing the passage of heat.

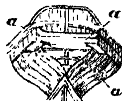
Transcendental. A term used in mathematics to describe problems, for the solution of which the ordinary methods of calculation are inapplicable.

Transit,(tran'sit). [L. *Transitus*, a passing over.] The passage of an inferior planet across the disc of the sun, when in inferior conjunction: observed especially with a view to the measurement of the distance of the sun from the earth. *T. instrument:* an apparatus used for the observation of transits.

Transition. *T. rocks:* those connecting Primary and Secondary. Below Carboniferous and Old Red Sandstone, also called Grauwacke and Silurian.

Translucent, (trans-lū'sent). [L. *trans*, across; *luceo*, I shine.] Permitting the passage of light, but not of optical images, as with oiled paper and ground glass.

Transoms, (tran'somz). [L. *transenna*, a rope.] Cross-pieces: horizontal bars in a window, at a ship's stern, &c. *T. stern* =Square stern.



a, a, a, Transoms.

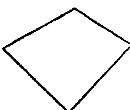
Transparent=Diaphanous: allowing light to pass through, so that the form of objects can be discerned.

Trap, (trap). [Sw. *trappa*, stair.]=Greenstone, an ancient volcanic rock, a compound of felspar and hornblende=Lava that has been injected.

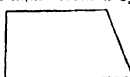
Trap-door spider. A burrowing spider.

Trapa, (trā'pa).=Water caltrops: an aquatic plant belonging to Onagraceæ.

Trapezium, (tra-pē'zi-um). [The Latin name.] Any plane figure formed by four straight lines, used only when it has no regular form, none of the sides being parallel.


Trapezium

Trapezoid, (trap'ē-zoid). [Trapezium, *q.v.*; Gk. *eidos*, form.] A plane figure formed by four straight lines, two of which are parallel.


Trapezoid.

Trapezohedron, (trap-ē-zō-hed'ron). [Trapezium, *q.v.*; Gk. *hedron*, face.] A solid figure formed by twenty-four equal trapeziums.

Trappean rocks, (trap'e-an) [Trap, *q.v.*] Unstratified rocks, including basalt, greenstone, porphyry, &c.=Volcanic rocks.

Trass, (tras). [*Tarrass*, the German word.] A stratum of volcanic deposit resembling puzzuolana.

Traveller's joy=Clematis, *q.v.*

Traverse sailing. *v.* Sailing.

Travertin, (trav'ęr-tin). [The French word.] Limestone deposited from calcareous springs.

Trawl, (trawl). A large bag net, dragged along the bottom of the water.

Treacle, (trē'kl)=Molasses, *q.v.* *T. mustard* =Erysimum, *q.v.*

Tread, (tred)=Cicatricula, *q.v.*

Tree, (trē). [*Treo*, the A.-S. name.] A plant of large size, having a perennial stem or trunk, also considered as a colony of plants. *Cotton T.*=Gossypium, *q.v.* *Cotton T. of India* = Bombax. *Fire T.* = Nuytia, *q.v.* *Grass T.* = Xanthorrhœa, *q.v.* *Gum T.*= Eucalyptus. *Hand T.*=Cheirostemon platanoides. *Lead T.*=Arbor Saturni, *v.* Lead tree. *Mammoth T.*, *v.* Mammoth tree. *Mango T.*=Mangifera Indica. *Palm T.*, *v.* Palmaceæ. *T. climber*=Anabas, *q.v.* *T. crab*= Birgus, *q.v.* *T. fern*=Cyathea. *T. frog*= Hyla, *q.v.*, found especially in S. America: adapted to tree-life by the digits ending in suckers. *T. grasshoper* = Meconema varia. *T. kangaroo*=Phalangista, Cuscus, and other genera. *T. mallow*= Lavatera, *q.v.* *T. nails*, long wooden bolts used in shipbuilding, &c. *T. serpents*=Leptophina, *q.v.* *T. wasp*= Vespa arborea.

Tree-like=Dendriform.

Trefoil=Trifolium. *Bird's foot* T.=Ornithopus. 2. = Lotus. *Hop T.* = Trefolium procumbens.

Trefolium=Trefoil=Trifolium, *q.v.*

Trehalose=Mycose, *q.v.*

Tremadoc slates, (trē'ma-dok). [T in Carnarvonshire.] The uppermost division of the Cambrian group

Tremandraceæ,(trē-man-drā'se-ē). [*Tremandra*, the typical genus.]=Pore-worts: slender hairy shrubs with showy flowers, belonging to Sapindales.

Trematoda, (trē-ma-tō'da). [Gk. *trematodes*, full of holes.]=Trematodes=Flukes: animals belonging to Scolecida, having but one opening: a division of Sterelmintha, *q.v.*

Tremolite, (trem'ō-līt). [Tremola, in Switzerland.] A mineral of the Amphibole group, a white variety of hornblende.

Trepan, (tre-pan'). [The French word.] A surgical instrument used for the removal of a portion of bone.

Trepangs, (trē-pangz'). Animals belonging to Holothuridea, used for food.

Trephine, (tre-fēn') [Trepan, *q.v.*] A modification of the trepan, *q.v.*

Tresses. *Lady's T.*=Spiranthes autumnalis.

Trewiaceæ, (trō-i-ā'se-ē). [Dr Trew of Nuremburg.] Tropical plants belonging to Euphorbiaceæ, sometimes considered as a separate order.

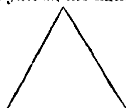
Tri- (tri). [L. *tres*, three.] A prefix implying three.

Triads, (tri'adz) [Tri, *q.v.*]=Triatomic=Tervalent, chemical elements, one atom of which is equivalent to three atoms of hydrogen, boron, gold, thallium, &c.

Triamides, (tri'a-midz) [Tri and Amides, *q.v.*] Compounds of three atoms of ammonia, in which the hydrogen is partly or wholly replaced.

Triammonias, (tri-am-mō'ni-az). [Tri and Ammonia, *q.v.*]=Triatomic bases=Triamines: bases formed from triatomic alcohols.

Triangle, (tri-ang'gl). [*Triangulum*, the Latin word.] A figure formed by three straight lines, each intersecting both the others, which, if it were to revolve round one extremity of the base, would form a cone. *Isosceles T.*: one of which two of the sides are equal. *Ratios of a T.*, *v.* Sine, Cosine, Tangent, Cotangent, Secant, Cosecant. *Solution of a T.*, *v.* Solution.


Triangle.

Triangulum, (tri-ang'ū-lum). [The Latin word.]=The Triangle: a small northern constellation.

Triangulum Australis=the Southern Triangle; a small constellation near the South Pole, having three bright stars.

Trias, (trī'as). [Gk. *trias*, triple.]=New Red Sandstone: a series of strata intermediate between the Carboniferous and Lias formations: divisible into three groups, of which only the highest and lowest are known in England. *Upper T.*=Keuper. *Middle T.* =Muschelkalk. *Lower T.*=Bunter.

Trichechus,(tri'ke-kus). [Gk. *trichęches*, having hair.] Morse, sea-cow, sea-horse, &c.; an aquatic mammalian animal, belonging to Phocidæ.

Trichina, (trik-ī'na). [Gk. *trichinos*, hairy.] A microscopic parasitic worm, found in human muscles, belonging to Entozoa.

Trichiurus, (trik-i-ū'rus). [Gk. *trichios*, hairy; *oura*, tail.]=Hair-tail: a fish belonging to Tænioides.

Trichlorides, (trī-klō'rīdz). [Tri and Chloride, *q v*]=Terchlorides. compounds of one atom of a metal with three atoms of chlorine

Trichocephalus, (trik-ō-sef'a-lus). [Gk. *thrix*, hair; *kephale*, head.] A nematoid worm

Trichodesmium, (trik-ō dez'mi-um). [Gk. *thrix*, hair; *desme*, bundle.] A plant belonging to Algæ, also called Sea-dust.

Trichomes, (trik'ōmz). [Gk *trichoma*, hairyness.] Hairs on roots, underground stems, bases of leaf-stalks, &c

Trichoptera, (trik-op'ter-a). [Gk. *thrix*, hair, *pteron*, wing.]=Caddis flies: name proposed for a new order, separated from Neuroptera

Trichospermi, (trik-ō-sper'mī) [Gk *thrix*, hair; *sperma*, seed.] Puff balls, &c.: fungi belonging to Gasteromycetes

Trichotomy, (tri-kot'ō-mi) [Gk. *tricha*, in three, *temno*, I cut] Continual division into threes *cf.* Dichotomy.

Trichroism, (tri-krō'izm). [Gk. *tri*, three, *chroma*, colour] Having three colours, according to direction of view.

Triclinic, (trī-klī'nik). [Gk. *tri*, three, *klino*, I bend.] *T. minerals* have three axes, each oblique to the others.

Tricuspid, (tri-kus'pid) [L. *tres*, three; *cuspis*, point.] Three-pointed. *T. valve:* in the heart.

Tridymite, (trid'i mīt) A mineral, belonging to the quartz group, composed chiefly of silver

Triesneter. A crater in Moon 20 miles in diameter.

Triethylic ether=$C_7H_{16}O_3$: a heavy aromatic fluid, a powerful anæsthetic

Trifolium, (tri-fō'li-um). [Tri, *q.v.*, L *folium*, leaf]=Trefoil, clover, &c.: a small herb belonging to Fabaceæ

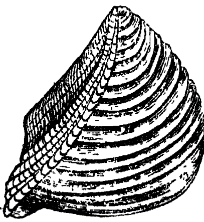
Triforium, (tri-fō'ri-um). [Tri, *q v.*; L. *foris*, door.] A gallery in the side of the nave of a church.

Trigeminal nerves, (tri-jem'i-nal). [Tri, *q.v* , L. *gemini*, double] The fifth pair of cerebral nerves; large nerves supplying the jaws, &c.

Trigla, (trig'la)=Gurnard: a fish belonging to Loricati.

Trigonella, (tri-go-nel'la). [Gk. *treis*, three, *gonia*, angle]=Fenugreek: a plant belonging to Leguminaceæ.

Trigonia, (tri-gō'ni-a). [Gk. *treis*, three; *gonia*, angle.] A molluscous animal, shells of which are found in Cretaceous and Jurassic rocks.

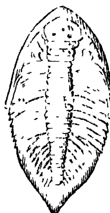

Trigonia costata.

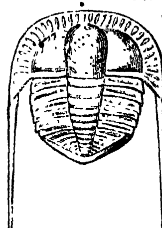
Trigonicarpa, (tri-gon - i - kăr' pa). [Gk. *treis*, three; *gonia*, angle; *karpos*, fruit.] Nuts of coniferous plants found fossilised in coal.

Trigonometry,(trig-ō-nom'e-tri). [Gk. *treis*, three; *gonia*, angle; *metron*, measure] Originally used for the measurement of triangles; now used also for other mathematical calculations.

Trilliaceæ, (tril-li-ā'se-ē). [*Trillium*, the typical genus]=Paride: herbs with large flowers, forming a division of Dictyogens

Trilobita, (trī-lob'i-ta) [Gk. *treis*, three, *lobos*, lobe.]=Trilobites: fossil crustaceans, of many genera: three lobes and sessile eyes, may have had legs, and belonged to Isopoda, extinct since Primary period, the last being found in carboniferous rocks, *e g.*, asaphus, calymene, phacops, and trinucleus are trilobites.


Phacops caudatus


Trinucleus fimbriatus

Trimera, (trī-mē'ra). [Gk *treis*, three, *meros*, part] Lady birds, &c.: small beetles, belonging to Coleoptera.

Trimeresuri. A poisonous snake of India, belonging to Crotalidæ.

Trimetric, (trī-met'rik) [Gk. *treis*, three; *metron*, measure.] *T crystals:* those having three unequal angles

Trimorphism, (trī-mor'fizm). [Gk. *treis*, three; *morphe*, form] Having three forms, as in some butterflies, crustacea, and plants. *cf.* Dimorphism.

Tringa, (tring'ga) Sand-piper a bird belonging to Charadriadæ *T. canutus:* knot-piper, belongs to Scolopacidæ.

Trinia, (trin'i-a). A plant belonging to Apiaceæ, also called Hone-wort

Trinitrocellulose, (trī-nī-trō-sel'ū-lōs) = Guncotton, *q v.*

Trinitroresorcin, (trī-nī-trō re-sor'sin)=Oxypicric acid, *q.v.*

Trionycidæ, (trī-ō-nī'si-dē). [Trionyx, *q.v.*; Gk *eidos*, form]=Mud-turtles=Soft tortoises: fresh-water carnivorous.

Trionyx,(trī'ō-niks). [Gk. *tri*, three; *onyx*, claw.] Mud-turtle a variety of the turtle. *cf* Chelonia.

Tri-oxides of the type H_6O_3; metallic anhydrides of strongly acid character.

Tripe de roche. [The French name]=Gyrophora: a lichen, also called Lecanora.

Triphane, (trī'făn). [Gk. *triphanes*, thrice.] A mineral, chiefly silicate of aluminum and lithium.

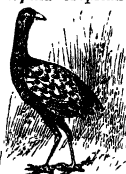
Triplicate ratio, (trip'li-kăt). [L. *triplicatus*, threefold]=Threefold: the ratio of the cubes of two numbers is the triplicate ratio of the numbers themselves.

Tripoli, (trip'ō-li). [Tripoli in Africa.]=Mountain meal=Infusorial earth: a siliceous stone composed of remains of microscopic plants

Tripod of life. Term used by Bichat for brain, heart, and lungs.

Trisection, (trī-sek'shun). [L *tres*, three;

sectio, cutting.] Division into three equal portions.
Trisetum, (trī-sē'tum). [L. *tri*, three; *setum*, bristle.] Yellow oat: a variety of the oat.
Tristearin, (trī stē'rin) [Tri and Stearin, *q.v.*] = Natural stearin.
Tristichous, (tris'ti kus). [Gk. *treis*, three; *stichos*, row]=Three-ranked, in three rows.
Triticum, (trit'i-kum). [The Latin name]= Wheat a grass plant belonging to Gramineæ, from the seeds of which wheaten flour is obtained.
Triton, (trī'ton) [Classical.] 1. A variety of the newt. 2. A molluscous animal belonging to Siphonostomata.
Trityl, (trī'til)=Dipropyl, *q.v.*
Tritylene, (trī'ti-lēn). [Trityl, *q.v.*]=C_3H_6= Propylene: a gaseous hydrocarbon of the Olefine series.
Tritylia, (trī-tĭ'li-a) [Trityl, *q.v.*]=C_3H_9N= Propylamine: an alcoholic base found in bones
Tritylic, (trī-tĭ'lik). [Trityl, *q.v.*]=Propylic related to propyl.
Triuridaceæ, (trī-ū-ri-dā'se-ē) [Triuris, the typical genus]=Tail-worts. small herbs belonging to Dictyogens
Trochal-disk, (tro kal). [Gk. *trochos*, wheel.] The surface bearing the cilia round the mouth of wheel animalcules.
Trochaloptera, (trō-ka-lop'ter-a)=Garrulax: a bird, also called Laughing Thrush, found in Hindostan and China
Trochanter, (trō-kan'ter). [Gk. *trochazo*, I turn round.] The projection of bone on the femur, to which the thigh muscles are attached.
Trochidæ, (trō'ki-dē). [Trochus, the typical genus, Gk. *eidos*, form.] A family of molluscous animals belonging to Gasteropoda.
Trochilidæ, (trō-kil'i-dē) [Trochilus, the typical genus.] Humming-birds, *q v.*. a family of insectivorous birds, remarkable for their small size, brilliant plumage, short feet, and long wings, found chiefly in the tropical parts of America
Trochlea, (trok'le-a) [Gk *trochos*, pulley] A bony process, somewhat resembling a pulley in shape
Trochlear, (trok'le-ar). *T. nerve* = Fourth nerve, *v.* Nerves.
Trochoid, (tro koid). [Gk. *trochos*, wheel, *eidos*, form] The curve described by a point in a wheel rolling on a straight line.
Troglodytes, (trog'lō-dīts). [Gk. *trogle*, a cave] 1. Gorilla, chimpanzee, &c an arboreal, vegetarian ape found in W. Africa. 2.=Wren: an insessorial bird.
Trogon,(trō'gon) [Gk. *trogo*, I gnaw] A perching, insectivorous bird, known chiefly in S America and India; has beautiful plumage.
Trollius, (trol'li-us)=Globe flower: an herb belonging to Ranunculaceæ.
Trolly, (trol'li)=Bogie, *q.v.*
Trombididæ, (trom-bid'i-dē) [Trombidium, the typical genus] = Garden-mites: small spider-like animals, living on plants, belonging to Acarina
Trompe, (tromp). [F *trombe*, water spout] An apparatus for blowing: contrived to maintain a stream of air at any required pressure, by means of water, which flowing down a tube carries the air with it.
Trona, (trō'na). A mineral, chiefly carbonate of soda.
Tropæolaceæ, (trop-ē-ō-lā'se-ē). [Tropæolum, *q v.*] A family of plants: trailing herbs, belonging to Malvales.
Tropæolum, (trop-ē'ō-lum). [Gk. *tropaion*, trophy.] Indian cress: an herb, the type of Tropæolaceæ.
Tropic, (trop'ik) *v.* Tropics. *T. bird*=Phaeton, *q.v.*
Tropics, (trop'iks). [Gk. *tropikos*, turning.] The hottest portion of the Earth's surface, between 23½° N. and 23½° S. latitudes: *i.e.*, a zone 47° wide, having the equator for its central line.
Trout, (trout). [*Truht*, the A.-S. name] A fish, resembling the salmon, belonging to Salmonidæ.
Troy, (troy). [Troyes, in France.] *T. weight:* used for gold and silver, &c., *v.* Tables.
Truffle, (truf'fl). [*Truffe*, the French name] =Tuber: an edible fungus, belonging to Ascomycetes.
Trumpet. *T. fish*=Centriscus scolopax. *T. flower*=Bignonia, *q v.* *T. tree*=Cecropia.
Trumpeter. *Golden T.*=Psophia crepitans. *T swan* = Cygnus buccinata.


Trumpeter, Golden-breasted

Truncated, (trung-kā'ted). [*Truncatus*, the Latin word] Cut short, having the apex removed
Trunk,(trungk). [*Truncus*, the Latin word.] 1 Stem of a tree. body of a vertebrate animal, generally the chief portion or main body of any organised structure. 2 The proboscis of an elephant. *T engine:* a steam engine in which the piston and connecting-rod are connected within a tubular piston-rod *T fishes*=Ostraciontidæ; named from the quadrangular cuirass of ganoid plates.
Trunnions, (trun'yunz). [F. *trognon*, stump.] Side projections by which a gun is supported in its carriage.
Truss, (trus) [*Trousse*, the French word.] 1. A timber framework, for support, as of a roof. 2. Any system of bars or rods intended for support. 3. A pad used for support in cases of rupture.
Trygon, (trī'gon). [Gk. *trygo*, I pluck.]= Sting-ray: a fish belonging to Raiidæ.
Tube. *Eustachian T*, *v.* Eustachian tubes. *Neural T.*, *v.* Neural tube. *T. worms*= Tubicola, *q.v.*
Tuber, (tū'ber). [L. *tuber*, swelling.] 1.= Truffle, *q.v.*, the type of Tuberaceæ. 2. A bulbous underground portion of a stem, the buds of which are called eyes; *e.g.*, potato, crocus.
Tuberaceæ, (tū-ber-ā'se-ē). [Tuber, *q v.*] Truffles: fungi, having rounded tuber-like bodies, usually underground, belonging to Ascomycetes.

Tubercles, (tū'bėr-klz). [L. *tuberculum*, small tuber.] Small swellings or tubers

Tubes. *Eustachian T.*, *v.* Eustachian tubes. *Fallopian T.*, *v.* Fallopian tubes. *Lightning T.* = Fulgurites, *q.v.*

Tubicola, (tū-bik'o-la). [L. *tuba*, tube, *colo*, I inhabit.] = Tube-worms: animals, belonging to Annelida, living in calcareous tubes.

Tubularidæ, (tū-bū-lar'i-dē). A sub-division of Hydrozoa.

Tubulata, (tū-bū-lā'ta). Ehrenberg's term for Bryozoa, Turbellaria, Nematoidea, &c.

Tuff, (tuf). [*Tufo*, the Italian word.] = Volcanic tuff: a compound of sand, cinders, &c., thrown from volcanoes = Volcanic ash; also called Tufa.

Tufted quail = Lophortyx.

Tulipa, (tū'li-pa). [The Latin name.] = Tulip: a plant belonging to Liliaceæ, remarkable for the beauty of its flowers.


Tulip

Tulip, (tū'lip). [Tulipa, *q.v.*] = Tulipa, *q.v.* *T. tree* = Liriodendron, *q.v.* *T. of gun* = Swell, increase of thickness at muzzle.

Tumbril, (tum'bril). [*Tombereau*, the French word.] = Caisson: a covered cart to carry military tools, &c.

Tumulus, (tū'mū-lus). [L. *tumulus*, mound.] Artificial mound of earth, of ancient origin, intended for a tomb, also called Barrow.

Tunbridge Wells sand = A sub-division of Hastings sand.

Tungstates, (tung'stāts). [Tungsten, *q.v.*] Compounds of tungstic acid and bases.

Tungsten, (tung'sten). [Sw. *tung*, heavy; *sten*, stone.] = Wolframium = W^vi: a heavy, hard, infusible metal.

Tungstic acid, (tung'stik). [Tungsten, *q.v.*] = $H_2W_4O_4$: a yellow powder, also called Tungstic trioxide.

Tunicata, (tūn-i-kā'ta). [L. *tunicata*, cloak.] = Ascidioida = Sea squirts: marine animals, in coriaceous bags, fixed to rocks, or floating in compound masses have three coats, or tunics = Test, mantle, and peritoneum; owing to their nature, no fossil remains have been found.

Tunicin, (tū'ni-sin). [Tunicata, *q.v.*] = $C_6H_{10}O_5$: a substance resembling cellulin, found in the coating of tunicata.

Tuning fork. A bar of steel, having two prongs, which always vibrates at the same rate, and gives the same musical note.

Tunny, (tun'ni). [*Thunnus*, the Latin name.] = Thynnus: a fish resembling the mackerel, belonging to Scombridæ.


Tunny.

Tupaia, (tū'pī-a). [The Malayan name.] A carnivorous animal somewhat resembling the squirrel.

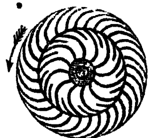
Turacin, (tū'ra-sin) = An animal pigment, containing copper, found in the feathers of touracon.

Turanian, (tū-rā'ni-an). Caucasian, Egyptian, Tibetic, Malay, Mongol, American, and other races, forming a primary division of the human race.

Turbellaria, (tėr-bel-lā'ri-a). [L. *turbellæ*, tumult.] Turbellaria: Nemertes, Planaria, &c.: animals belonging to Scolecida, which produce currents by the vibrations of their cilia.

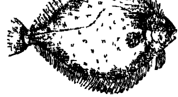
Turbinal bones, (tėr'bi-nal) = Spongy bones: bones in the nose, the interior of which have many air cavities, giving them a spongy nature.

Turbine, (tėr'bin). [L. *turbo*, whirlwind.] A water-wheel, usually horizontal, which is made to revolve by the action of running water.


Turbine Wheel

Turbinidæ, (tėr-bin'i-dē). [L. *turbinatus*, conical.] = Top-shells = Turbinated shells: a family of Molluscs, belonging to Gasteropoda.

Turbot, (tėr'bot). [The French name.] = Rhombus maximus: a flat fish, belonging to Pleuronectidæ.


Turbot

Turdus, (tėr'dus). [The Latin name.] Thrush, &c.: a bird belonging to Merulidæ, a family of dentirostral birds. *T. merula* = Blackbird. *T. minor* = Corkling. *T. musica* = Mavis = Song-thrush.

Turf, (tėrf). [The A.-S. word.] Bog-earth: used as fuel, *v.* Bog. *T. sheep:* a small sheep, of the stone period.

Turkey, (tėr'ki). A poultry-bird = Meleagris, *q.v.*, named from being supposed to have originally come from Turkey. *T. stone* = Novaculite, *q.v.*

Turkish, (tėr'kish). *T. language* = Osmanli: spoken at Constantinople. *T. race* = Turkoman or Tartar nomadic race of N. Asia. *T. saddle* = Sella Turcica: a depression in the sphenoid bone. *T. tobacco* = Nicotiana rustica.

Turk's cap lily = Lilium martagon, *v.* Martagon.

Turmeric, (tėr'mer-ik). [*Terra-merita*, the Latin name.] A yellow colouring matter, obtained from turmeric plant, Curcuma longa.

Turnbull's blue = Ferrous ferricyanide.

Turner's yellow = Oxychloride of lead.

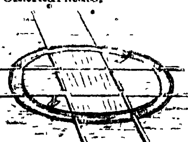
Turneraceæ, (tėr-ner-ā'se-ē). [Turnera, the typical genus.] = Turnerads: S. American herbs, belonging to Violales.

Turnip, (tėr'nip). [W. *turn*, round; A.-S. *næpe*.] Brassica rapa: a plant, with edible root, belonging to Brassicaceæ. *T. flea* = Haltica brassicæ: a beetle = Phyllotreta nemorum. *T. fly* = Nigger = Athalia spinarum, belongs to Hymenoptera. *T. moth* = Agrotis segetum: a moth.

Turnsole, (tėrn'sōl). [*Tournesol*, the French name.] = Heliotropium, *q.v.*; also called Heliotrope and Sun flower.

Turnstone, (tern'stōn)=Strepsilas interpres: a bird belonging to Charadriadæ.

Turn-table. A platform, capable of revolving horizontally, used on railways to turn engines, &c., round.


Turn-table

Turpentine, (ter'pen-tīn). [*Terebenthine*, the French word.] A resinous substance obtained from pine trees. *Chian T.* from Pistacia lentiscus. *Oil of T.*=$C_{10}H_{16}$: a volatile very inflammable liquid, obtained from turpentine. *T. tree*=Pistacia terebinthus. *Venice T.*, from larch tree.

Turquoise, (ter'kois). [The French name.] A mineral, chiefly hydrated phosphate of aluminium and oxide of copper. *Occidental T.*=*Bone T.*=Odontolite: bone coloured by phosphate of iron. *Oriental T.*=*Mineral T.*

Turrilites, (tur'ri-līts) [L. *turris*, tower.] A family of cephalopod molluscous animals.

Turritella, (tur-ri-tel'la) [L. *turris*, tower.] A gasteropod molluscous animal.

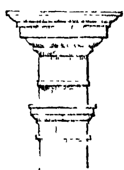
Turtle, (ter'tl)=Testudo, *q.v.* *Green T.*=Chelone mydas=Chelonia viridis. *Hawk's bill T.*=Chelone imbricata. *Mud T.*=Trionyx. *Snapping T.*=Chelydra serpentina. *Soft-shelled T.*=Trionyx ferox.


Turtle.

Turtle-dove=Columba turtur=Turtur auritus.

Tuscan, (tus'kan) [Tuscany.] *T. order:* the least ornate of the orders of architecture. *v.* Orders.

Tusks, (tusks). [*Tusc*, the A.-S. word.] Elongated conical teeth, often protruding: in elephant, narwhal, dugong, &c.=Incisors: in boar, walrus, hippopotamus, &c.=Canines.


Tuscan Order.

Tussilago, (tus-si-lā'go). [L. *tussis*, cough.] Colts-foot: an herb belonging to Asteraceæ, named from its medicinal use. *T. farfara*, British tobacco.

Tutsan, (tut'san)=Hypericum androsæmum: a plant belonging to Hypericaceæ.

Tutsans=Hypericaceæ, *q.v.*

Tuttle's comet. Has an orbit identical with that of August meteors.

Tutui=Aleurites triloba: a plant.

Tuyere (to yar). [The French word.] The opening of a pipe by which air is admitted into a blast furnace.

Tway-blade=Listera, *q.v.*

Twilight, (twī'līt) [*Tweon-leoht*, the A.-S. word.] Refracted and reflected sunlight, preceding sunrise and following sunset, during the time that the sun is less than 18° below the horizon.

Twin. *T. crystals:* two crystals so joined that by revolving 180° round a common axis, one would come into the space occupied by the other. *T. graptolites*=Didymograpsus.

Twins=Gemini, *q.v.*

Tycho, (tī'ko) [Tycho Brahe.] An enclosed crater in the Moon, about 50 miles in diameter, surrounded by mountains, some 3 miles high.

Tympanic, (tim-pan'ik). [Tympanum, *q.v.*] The bone in the ear to which the membrane of the ear is attached.

Tympanum, (tim'pa-num). [Gk. *tympanon*, drum.]=Drum of the ear: a membrane separating the external opening of the ear from the cochlea and internal mechanism.

Type-metal. An alloy of lead, antimony, and tin.

Typha, (tī'fa) [*Typhos*, the Greek name.] Cat's tail: an herb, the type of Typhaceæ.

Typhaceæ, (ti-fa'se-ē) [Typha, *q.v.*] Bulrushes: marsh herbs, with long narrow leaves, belonging to Arales.

Typhoid, (tī'foid) [Typhus, *q.v.*: Gk. *eidos*, form.] A phase of disease somewhat resembling typhus fever.

Typhoons, (tī-foonz'). [L. *typhon*, whirlwind.] Hurricane-like storms, in Indian and Chinese seas.

Typhus, (tī'fus). [Gk. *typhos*, smoke.] A febrile variety of disease, very contagious.

U.

Ugric=Ugrian: tribes of the great Asiatic table-land, also called Finno-Turkic.

Ulcer, (ul'ser). [*Ulcus*, the Latin word.] A sore discharging pus.

Ulex, (ū'leks)=Furze-whin, Gorze, &c.: a thorny shrub, with yellow flowers, belonging to Fabaceæ.

Ullmannite, (ul man-nīt). A mineral, containing antimony, nickel, and sulphur.

Ulmaceæ, (ul-ma'se-ē). [Ulmus, *q.v.*]=Elmworts: shrubs and trees, with apetalous flowers, belonging to Rhamnales.

Ulmic acid, (ul'mik). [Ulmus, *q.v.*]=$C_{20}H_{14}O_6$: a brittle, brown substance obtained from decaying wood, also called Humus.

Ulmin, (ul'min). [Ulmus, *q.v.*]=Ulmic acid, *q.v.*

Ulmus, (ul'mus). [The Latin name.]=1. Elm: a tree, the timber of which is very durable, the type of Ulmaceæ. 2.=Humus: decaying wood.

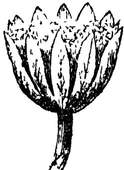
Ulna, (ul'na). [Gk. *olene*, elbow.]=Elbow: larger bone of the fore-arm; corresponds to the fibula of the leg.

Ultramarine, (ul-tra-ma-rēn') [L. *ultra*, beyond, *mare*, sea.] A blue colouring matter: a mineral, chiefly phosphate of aluminum. *Artificial U.*, made from silicate of aluminum, soda, sulphur, carbon, &c. *Natural U.* = Lapiz-lazuli.

Ulva, (ul'va) [L. *ulva*, sedge.] A sea-weed, belonging to Algæ.

Ulvaceæ, (ul-vā'se-ē). [Ulva, *q v.*] A subdivision of Algæ.

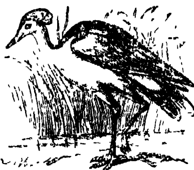
Umbel, (um'bel) [L. *umbella*, small shade.] A variety of inflorescence, in which the flower stalks all rise from one point of the stem.


Umbel.

Umbellates, (um-bel-lā'lēz). [Umbel, *q v.*] Plants with dichlamydeous polypetalous flowers, forming a division of Epigynous Exogens.

Umbelliferæ, (um-bel-lif'-er-ē) [Umbel, *q.v.*, L. *fero*, I carry.]=Apiaceæ, *q v.*

Umber, (um'ber). [Umbria, in Italy.] 1. A soft earthy compound of peroxide of iron and manganese, used as a brown pigment. 2. An African crow-like bird=Scopus umbretta.


Umber

Umbilical, (um-bil'i-kal). [Umbilicus, *q.v.*] Relating to the navel

Umbilicus, (um-bil'i-kus). [The Latin word.] =The navel: a depression in the abdomen of a mammalian animal, being the remains of the point of attachment of the umbilical cord, or cord connecting the parent and child previous to birth.

Umbo, (um'bō). [The Latin word.]=Beak of a shell, and generally any pointed projection

Umbra, (um'bra). [L. *umbra*, shadow.] The darker portion of a shadow.

Umbrella. *U. bird*=Cephalopterus ornatus: a crow-like bird of S. America.

Umbriel, (um'bri-el). A satellite of Uranus.

Unaw. *v.* Bradypus.

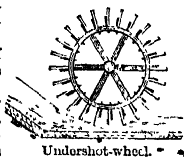
Unakalkay, (ū-na-kal'kā). The chief star of the constellation Serpens.

Uncaria, (un-kā'ri-a). A plant belonging to Rubiaceæ, from which a dye-stuff, gambier, is obtained.

Undecagon, (un-dek'a-gon). [L. *undecim*, eleven; *gonia*, angle.] A plane figure having eleven sides, and, therefore, eleven angles.

Under-clay. Beds of clay, or firestone, usually found below coal, in which are found roots of trees, the trunks of which, usually flattened, are in the coal; also used for any fossil soil which once supported trees.

Undershot. *U. wheel*: a wheel moved by a stream of water passing under it.


Undershot-wheel.

Undulation, (un-dū-lā'shun) [L. *undula*, small wave.] Vibration. wave of motion: alternate motion.

Undulatory theory of light. That light is a vibratory motion of the particles of a luminiferous ether

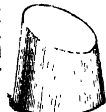
Ungual, (ung'wal). [L. *unguis*, nail.] Relating to claws, nails, or hoofs *U bones*= Lachrymal bones: two small bones in the orbit of each eye

Unguents, (ung'gwents) [L *unguentum*, ointment.] Any soft composition used as an ointment, or for the lubrication of machinery.

Unguiculata, (ung'wik-ū-lā'ta). [L. *unguis*, nail.] Animals having nails or claws, used by Owen for Quadrumana and Carnivora.

Unguis, (ung'wis). [The Latin word.] Nail or claw.

Ungulata, (un-gū-lā'ta). [L. *ungula*, hoof.] Hoofed quadrupeds: horses, pigs, &c, a division of Mammalia, marked by a non-deciduate placenta, enamelled teeth, and hoof-like nails enclosing the toes.


Ungula

Unguligrade, (un-gū'li-grād). [L. *ungula*, hoof; *gradior*, I walk.] = Horse, &c: animals walking on the tips of their hoofed digits

Uniauriculate animals=Gasteropoda, *q.v.*

Uniaxial, (ū-ni-aks'i-al) [L. *unus*, one, Axis, *q.v.*] *U. crystals:* crystals having one optic axis *U. development:* in all vertebrate animals, some molluscs and annulosa, in some of exogens, endogens, algæ, and fungi.

Unicorn, (ū'ni-kawrn). [L. *unicornis*, one-horned.] 1. Monoceros a southern constellation 2. A fabulous animal, represented in heraldry. *Sea U* =Narwhal, *q.v.*

Unio, (ū'ni-ō). [The Latin name.] A fresh-water lamellibranchiate animal; also called River-mussels.

Unisexual, (ū-ni-seks'ū-al). *U. plants*=Diclinous plants, those having stamens and pistils in different flowers.

Unison, (ū'ni-son). [L. *unus*, one; *sonus*, sound.] Sounds caused by the same number of vibrations, and therefore having the same pitch, are said to be in unison.

Unit *U. jar* = A small Leyden jar, the charge of which is taken as a unit of electric tension. *U. of capacity* = Cubic foot: in French=Litre. *Absolute U. of force*=Dyne =the force which acting on a gramme for one second generates a velocity of a centimetre per second. *Absolute U. of work*=Work done by a dyne working for the distance of a centimetre.

Univalent=Monatomic. *v.* Monads.

Univalve shells. Having the shell in but one piece *Land and fresh-water U* mostly plant eaters, with entire mouths. *Marine U.* carnivorous, with notched mouths


Univalve

Universe, (ū'ni-vers). [L. *universum*, the whole] The general system of all the stars visible, together with all other bodies influenced by them.

Universal. *U discharge*= an apparatus for discharging electricity, adapted to general use. *U. joint* = Hooke's joint, *q.v*

Unstable, (un-stā'bl). *U. equilibrium*, *v* Equilibrium

Unstratified, (un-strat'i-fīd). *U drift* = Boulder clay, also called Till *U rocks*: not in layers or strata, formed by igneous forces, and not deposited in water. *v.* Formations

Unukalkay= Unakalkay, *q v.*

Upas tree, (u'pas) [Malay; *upas*, poison.] 1 = Antiaris toxicaria. a tree belonging to Artocarpaceæ. 2 = Strychnos tieute: a poisonous tree


Upas tree

Upland-goose = Cloephaga Magellanica.

Upper Miocene of France= Faluns, *q.v.*

Upupidæ, (up'u-pa-dē). [Upupa, the typical genus] A family of birds belonging to Insessores=Hoopooes, *q v*

Ural-altaic. A primary division of languages, *q.v.*

Uralite, (ū'ra-līt) [Ural Mountains] A mineral connecting the amphibole and pyroxene varieties in one group.

Uranates, (ū'ra-nāts). [Uranic, *q.v*] Compounds of uranic acid and bases.

Uranic, (ū'ra-nik). [Uranium, *q v.*]. Relating to Uranium, *q.v*

Uranium, (ū-rā'ni-um). [Gk *ouranos*, heaven] =U: one of the iron-like metals, a steel-white malleable metal

Uranus, (ū'ra-nus) [Gk *ouranos*, heaven]= Georgium Sidus= Herschel. one of the Major Planets, discovered in 1781 by Herschel, has four, and perhaps six, moons; distance from the sun 1752 millions of miles, diameter 33 000 miles; year about 85 of ours, shines with a yellow light.

Uranyl, (ū ra-nil). [Uranium, *q v*] = U_2O_2= Oxide of uranium.

Urates, (ū'rāts) [Uric, *q v*] Compounds of uric acid and bases.

Urceola, (er'se-o-la). [L *urceolus*, pitcher] A plant belonging to Apocynaceæ. *U elastica*=Caoutchouc vine

Urchin, (er'chin). [*Urchone*, the O E word.] = Hedgehog, *v.* Erinaceus. *Heart U.s.*, belong to Echinoidea, *q.v.* *Sea U.s*=Echinidea, *q v.*

Urea, (ū're-a). [Urine, *q v*]=CH_4N_2O=Carbamide: a colourless, crystalline, animal base; an essential constituent of urine, the diamide of carbonic acid *Compound ureas.* substances obtained from urea by part of its hydrogen being replaced by an organic radicle *Ethyl ureas*: urea in which one atom of hydrogen has been replaced by some alcoholic radicle.

Uredinaceæ=Coniomycetes, *q v.*

Ureides, (ū'rīdz). [Urea, *q.v.*]=Salts of urea - water urea in which part of the hydrogen is displaced by the radicle of an acid *Monoureides* compounds formed by combining one atom of urea with an acid.

Ureter, (ū-rē'ter) [The Greek word] A tube passing from the kidney to the bladder, conveying urine.

Urethane=Carbamic ether, *q v.*

Urethra, (ū rē'thra) [The Greek word.] A tube by which the bladder is emptied.

Uria=Guillemot, *q v*

Uric acid, (ū'rik) [Gk. *ouron*, urine]= $C_5H_4N_4O_3$: a crystalline substance found in urine *Hyper U*: a modification of uric acid.

Urine, (u rin). [*Urina*, the Latin word.] The liquid which the kidneys secrete from the blood, holds in solution urea, uric acid, &c.

Urinary organs, (ū ri-na-ri) [Urine, *q v*]= Kidneys, ureters, bladder. *U. calculi* stony concretions sometimes deposited from urine.

Urinometer, (u-ri-nom'e-ter) [Urine, *q v.*; Gk *metron*, measure] An instrument for measuring the density of urine.

Urn-mosses=Bryaceæ, *q v.*

Urochs, (ū'roks)= Bos primigenius: an animal belonging to Bovidæ *cf* Aurochs.

Urodela, (ū-rō-dē'la) [Gk. *oura*, tail, *delos*, visible.] Salamanders, newts, &c: amphibious animals which retain the tail throughout life, chiefly N American, not known in Australia, S. Africa, or Hindostan=Ichthyomorpha.

Ursa Major, (er'sa mā'jor) [The Latin name.] =The Greater Bear one of the northern constellations, of which the chief stars are Dubhe, Merak, Phecda, Megrez, Alioth, Mizar, and Alkaid The constellation is also known by the names, The Plough, David's Car, Bier of Lazarus, and Charles's Wain.


Ursa Major.

Ursa Minor, (er'sa mi'nor) [The Latin name.] =The Lesser Bear: one of the northern constellations, resembling the Greater Bear in having the body and tail marked by seven stars, the chief of which are Polaris (at the end of the tail), and Kocab.

Ursidæ, (er'si-dē). [Ursus, *q v.*; Gk. *eidos*, form] A family of Mammalia, of which the bear is the type.

Ursus, (er'sus). [The Latin name.]=Bear: a large omnivorous hybernating quadruped. *U. Indicus*: Indian badger. *U. Malayanus*= Helarctos = Malay bear. *U spelæus*=Cave bear *U gulo*=Glutton. *U. ferox* grisly bear.

Urtica, (er-tī'ka). [The Latin name]=Nettle: an herb, with stinging hairs, the type of Urticaceæ. *U. urentissima*=Devil's bit.

Urticaceæ, (ẽr'ti-kā'se-ē). [Urtica, *q.v.*]=Nettle-worts: herbs, shrubs, and trees, with rough stinging leaves, and light spongy wood, belonging to Urticales

Urticales, (ẽr-ti-kā'lez) [Urtica, *q.v.*] Plants, with monochlamydeous flowers, forming a division of Diclinous Exogens

Usnea, (us'ne-a). A lichen, yielding a yellow dye-stuff. *U. florida* = Beard-like lichen.

Usnic acid, (us'nik). [Usnea, *q.v.*]=$C_2H_{16}O_7$ a yellow-dye-stuff, found in usnea and other lichens.

Uterogestation, (ū-ter-ō jes-tā'shun). [Uterus, *q.v.*; L. *gesto*, I carry.]=Pregnancy: the period of fœtal life between conception and birth.

Uterus, (ū'ter-us). [The Latin word.] Womb: the part of the female generative organ in which the fœtus is contained during gestation.

Utricle, (ū'tri-kl). [L. *utriculus*, small bottle.] =A bottle-shaped cell or bladder, any small bag-shaped cell

Utricularia, (ū-tri-kū-lā'ri-a) [Utricle, *q.v.*] A plant belonging to Lentibulariaceæ

Uvula, (ū'vū-la) [L. *uva*, grape.] A prolongation of the soft palate at the back of the mouth.

Uwarowite, (ū'wär-ō-wit) [M. Uwarow, a Russian.]=Chrome garnet: a green variety of garnet.

V.

Vaagmaer, (vāg'mẽr)=Deal fish = Trachypterus bogmarus

Vaccination, (vaks-in-ā'shun) [L. *vaccinus*, from a cow.] To inoculate with vaccine lymph, to produce cow pox as a preventive of small pox. *cf.* Inoculation.

Vacciniaceæ, (vaks-in-i-ā'se-ē) [Vaccinium, the typical genus.]=Cranberries: shrubs and trees belonging to Cinchonales.

Vaccinic acid, (vaks-in'ik) [L. *vacca*, cow.] =$C_8H_{15}O_2$: an acid found in butter.

Vacuoles, (vak'ū-olz). [L. *vacuus*, empty.] Spaces full of water, as found in sponges.

Vagina, (va-ji'na). [L. *vagina*, sheath.] 1. A general term for a sheath in animal and vegetable organisms. 2. The passage leading from the uterus to the outside of the body.

Vala. No. 131 of the Minor Planets

Valentinite, (val-en'ti-nit). A mineral, chiefly oxide of antimony.

Valeral, (val'e-ral). [Valeric, *q.v.*]=$C_5H_{10}O$= Valeric aldehyd: a pungent acrid liquid, the vapour of which is inflammable.

Valerates, (val'ẽr-āts) [Valeric, *q.v.*] Compounds of valeric acid and bases.

Valerene, (val'ẽr-ēn). [Valeric, *q.v.*]=Borneene, *q.v.*

Valeriana, (val-er-i-ā'na) [L. *valeo*, I am strong.]=Valerian: a plant, the type of Valerianaceæ.

Valerianaceæ, (val-ē-ri-an-ā'se-ē) [Valeriana, *q.v.*]=Valerian-worts: herbs belonging to Campanales.

Valerianella, (val-ē-ri-a-nel'la). [Valeriana, *q.v.*] An herb belonging to Valerianaceæ. *V. olitoria*=Lamb's succory.

Valerianic acid=Valeric acid, *q.v.*

Valeric acid, (val'er-ik) [Valeriana.]=$C_5H_{10}O_2$ =Tetrylformic acid=Phocenic acid=An acrid oily liquid obtained from valerian root, and by oxidation of fousel oil, oleic acid, &c.

Valerol, (val'e-rol). [Valeric, *q.v.*]=$C_6H_{10}O$: a crystalline substance found in essence of valerian.

Valeryl, (val'e-ril). [Valeric, *q.v.*] The radicle of the valerianic group.

Valerylene = C_5H_8: a hydrocarbon of the acetylene series.

Valley of the Alps. A crater in the Moon, 75 miles long, 6 wide.

Valve, (valv) [L. *valvæ*, folding doors.] Generally, any movable partition which serves to regulate the passing of a fluid along a passage. *Safety V.* one kept closed by a weight until the pressure of the steam becomes great enough to be dangerous.

Valyl, (val'il)=C_8H_{18}= Dibutyl, *q.v.*

Vampire, (vam'pir). [The French word.] *V. bat*=Vampirus spectrum, belongs to Cheiroptera.



Vampire Bat

Van Beneden's classification. *v.* Beneden

Vanadiates, (van-ā'di-āts) [Vanadic, *q.v.*] Compounds of vanadic acid and bases

Vanadic, (van'a-dik). [Vanadium, *q.v.*] Relating to vanadium. *V. anhydride*=V_2O_5: a crystalline substance

Vanadium, (van-ā'di-um) [Vanadis=Freia, the Scandinavian goddess.]=V: a very rare metal, first obtained from the mineral vanadinite: acts upon glass and porcelain

Vanadyl, (van'a-dil). [Vanadium, *q.v.*]= Oxide of Vanadium.

Vanellus, (van-el'lus) *V. cristatus* = Bathbird=Peewit=Lap-wing: a bird belonging to Charadriadæ.

Vanessa, (va-nes'sa). A butterfly. *V. cardui* =Painted lady. *V. Io*=Peacock butterfly

Vanilla, (van-il'la) [*Bainilla*, the native name.] A climbing plant belonging to Orchidaceæ, found wild in tropical America.

Vanishing Fraction. *v.* Fraction

Vapour, (vā'pẽr). [L. *vapor*, steam.] The gaseous condition of liquids that can be evaporated without decomposition.

Varanus, (va-rā'nus). [*Ouaran*, Arabic name.] =Monitor: a large reptile found in Old World only

Variable stars. Stars, the apparent magnitude of which is variable; *e.g.*, η Argus, *o* Ceti, *S* Cancri, β Persei, &c.

Variation. 1.=Declination. 2. The connection between two quantities, when, if one be changed, the other changes in the same ratio, expressed by ∝, as a ∝ b. 3. The tendency of offsprings to differ from their parents, individually and within narrow limits.

Varicella, (va-ri-sel'la). [Variola, q.v.]=Chicken pox: an eruptive phase of disease.

Varicose, (va-ri-kōs). [L. varix, swollen vein.] Dilated; swollen.

Variety. In biology: an offspring differing from the parent within narrow limits.

Variola, (va-ri-o'la). [L. varius, spotted.]=Small pox: contagious eruptive febrile phase of disease.

Varioline, (va'ri-ō-lin). A principle found in lichens, especially in Variolaria.

Varley's constant battery. A modification of Daniell's.

Varm=Sea tape-worm.

Varnish. Solutions of gums, resins, wax, amber, &c., in alcohols, oils, and turpentine. *V. tree* =Melanorrhœa, belongs to Anacardiaceæ.

Varvicite, (var'vi-sit). A mineral, chiefly hydrated oxide of manganese.

Vascular, (vas'kū-lar). [L. vasculum, small vessel.] *V. system:* traversed by minute connected capillary tubes or canals, forming a kind of network. *V. plants*=Cotyledonous plants=Endogens and Exogens.

Vas deferens, (vas def'e-renz). [The Latin words.] The vessel through which the seminal fluid passes.

Vector, (vek'tor). [L. vector, carrier.] An imaginary line connecting a body moving round a centre with that centre.

Vectors, (vek'torz). [Vector, q.v.] A class of magnitudes having direction in space, and so capable of reversal; the subject of quaternions; requiring three numerical specifications for definition; e.g., the velocity of a body, or of an electric current.

Vedahs. An Asiatic people in Ceylon.

Vega. In Lyra, a star of first magnitude.

Vegetable, (vej'e-ta-bl). [L. vegetus, lively.] Relating to plants. *V. acids:* malic, tartaric, citric, &c., obtained from plants. *V. alkalies, v.* Alkaloids. *V. feeding lizards*=Iguanodon, scelidosaurus. *V. feeding animals*=Phytophaga. *V. growth:* absorption of inorganic matter, and its conversion into starch, &c., which is carried on under the influence of light in the plant-cells of green plants only. *V. ivory*=Tagua, a palm-like tree, also albumen of Corozo nuts. *V. jelly*=Pectin, a gelatinous principle found in plants. *V. leather, v.* Leather. *V. marrow*=Cucurbita ovifera. *V. parchment, v.* Parchment. *V. sulphur, v.* Lycopodium.

Veins, (vānz). [L. vena, blood-vessel.] Tubes conveying blood to the heart from the various parts of the body; differ from arteries in having valves. *Liquid V., v.* Liquid. *Mineral V., v.* Mineral.

Velleda, (vel'le-da). [Classical.] No. 126 of Minor Planets.

Vellum, (vel'um). [Velin, the French word.] A fine kind of parchment, made from calf-skin.

Velocity: of electricity = 288,000 miles per second, as measured by Wheatstone's apparatus under given conditions. *V. of light*= 190,000 miles per second. *V. of sound*=1093 feet per second in air; in solid stone=1600 feet.

Velum, (vē'lum). [L. velum, curtain.]=Arachnoid membrane of brain.

Velvet, (vel'vet). [L. vellus, fleece.] A silk fabric, having a soft surface formed of a number of loose threads.

Velveteen, (vel-ve-tēn). [Velvet, q.v.] v. Fustian.

Vena, (vē'na). [The Latin word.]=Vein, q.v. *V. cava:* the great trunk vein into which all the smaller veins empty themselves, and which conveys the venous blood so received to the heart; divided into vena cava superior and inferior, from the upper and lower parts of the body. *V. contracta:* the amount of liquid passing out of an orifice in a vessel containing it, is a stream having a diameter of about ⅝ of the diameter of the opening; this is called the vena contracta, because the liquid vein contracts in passing through the opening. *V. portæ* = Portal vein: a trunk vein receiving the blood of the veins from the stomach and intestines, and conveying it to the liver.

Veneer, (ve-nēr'). [Furnier, the German word.] A thin layer of wood, usually of a valuable kind, intended to be laid upon a substratum of inferior wood.

Venom, (ven'om). [Venenum, the Latin word.] Poison when communicated by means of stings or bites. *V. fangs:* teeth having a groove along which the poison passes.

Venomous serpents. Adder, asp, rattle-snake, viper, &c.

Venous, (vē'nus). [Vena, q.v.] Related to the veins.

Vent=Fire-hole of a gun; an opening made in a copper plug.

Ventral, (ven'tral). [L. venter, stomach.] Related to the inferior surface of the body. *V. fins:* not so fixed in position nor so fully developed as the pectoral. *V. tube*=Hæmal tube: enclosing the heart, lungs, and alimentary system.



v Ventral fin

Ventricles, (ven'tri-klz). [L. ventriculus, little belly.] Two cavities of the heart, which receive the blood from the auricles and transmit it to the lungs, and through the aorta to the body generally.

Ventriloquism, (ven-tril'ō-kwizm). [L. venter, belly; loquor, I speak.] The imitation of sounds so as to produce the impression of voices from other places.

Venus, (vē'nus). [Classical.] 1. One of the inferior planets; a very brilliant star; also called Hesperus, when an evening star; and Lucifer, when a morning star; the nearest planet to the earth, and so near it as to present phases in the same way as the Moon; diameter 7500 miles; year 224 days; distance from sun 66 millions of miles. 2. A bivalve mollusc, the type of the family Veneridæ. *V.'s bath*=Common teazel, the

leaves of which collect water. *V.'s fly-trap*=Dionæa muscipula.

Veratria, (ve-rā'tri-a). [Veratrum, *q v*] An alkaloid poisonous principle in veratrum.

Veratrum, (ve-rā'trum). [The Latin name.] A plant belonging to Melanthaceæ. *V. album* =White hellebore.

Verbascum, (ver-bas'kum). [The Latin name.] =Mullein: a woolly shrub belonging to Scrophulariaceæ.

Verbena, (ver-bē'na). [L. *verbenæ*, sacred boughs]=Vervain: an herb, the type of Verbenaceæ.

Verbenaceæ, (ver-be-nā'se-ē). [Verbena, *q v*] Verbenes: herbs, shrubs, and trees, between Echiales and Bignoniales.

Verd-antique, (verd-an-tēk'). [F *verd*, green; *antique*, ancient.] 1. A variety of marble, containing serpentine. 2.=Serpentine, *q.v.*

Verdigris, (ver-di-gris'). [*Verd-de-gris*, the French name]=Dibasic cupric acetate: a green, poisonous, crystalline substance, produced by the action of acetic acid on copper.

Verditer, (ver'di-ter). [*Verd-de terre*, the French name.]=Normal cupric acetate: a blue crystalline substance.

Verga, (ver'ga). A sun-star.

Verjuice, (ver'jūs). [*Verjus*, the French name.] The juice of unripe fruit.

Vermes, (ver'mēz). [L. *vermis*, worm]=Worms=Scolecida, *q.v.*, sometimes used for Annuloida.

Vermicelli, (ver-mi-chel'li). [The Italian name] Thread-like baked wheaten paste, used for food in Italy.

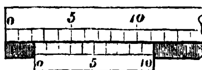
Vermiform, (ver'mi-fawrm.) [Vermes, *q v*] =Helminthoid: having an external resemblance to worms.

Vermifuge, (ver'mi-fūj) [L. *vermis*, worm; *fugo*, I drive away] Any substance which drives away worms.

Vermilion, (ver-mil'yun) [*Vermiglione*, the Italian word]=HgS=Mercuric sulphide. a red pigment.

Vernal, (ver'nal). [L. *ver*, spring.] Relating to spring *V grass*=Anthoxanthum.

Vernier, (ver'ni-er). [M Vernier.] A short graduated scale, sliding along a longer one, for greater precision of measurement.

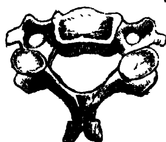


Vernier

Veronica, (ve-ron'i-ka). [The Italian name.] =Speedwell: an herb or shrub belonging to Scrophulariaceæ. *V. beccabunga* = Brooklime.

Versed sine. The versed sine of angle is the difference between its cosine and unity: vers. A=1−cos A.

Vertebra, (ver'te-bra). [L *verto*, I turn] One of the bones forming the spinal column; one of the segments of the endoskeleton, or axis of the body.


Vertebra

Vertebræ, (ver'te-brē). [Vertebra, *q v.*] 1. The endo-skeleton forming the axis of the body in vertebrata, and forming also the canal containing the nervous trunk, also called Backbone. 2. The series of connected calcareous plates forming the floor of the rays of star-fishes.

Vertebral, (ver'te-bral). [Vertebra, *q v.*] Related to the vertebræ, or backbone.

Vertebrata, (ver-te-brā'ta). [Vertebra, *q v.*] The highest sub-kingdom of animals: includes such diverse animals as men baboons, cobra, frogs, skylarks, and sprats, those having a spinal column, visceral arches, a vascular system, and an hepatic portal system; never more than four limbs, and the jaws always in the head, divided into Mammalia, Aves, Reptilia, Amphibia, and Pisces; also into Mammalia, Sauropsida, and Ichthyopsida. *Abranchiate V.* = Mammalia, Aves, and Reptilia. *Branchiate V.*=Reptilia, and Pisces.

Vertical, (ver'ti kal). [L. *vertex*, summit.] Upright, at right angles with the horizon. *cf* Horizontal

Vertigo, (ver-tī'go). [The Latin word.] 1. Giddiness caused by the flow of blood to the brain being irregular. 2. A very small molluscous animal, belonging to Gasteropoda.

Vervain, (ver'vān). [*Verveine*, the French name.]=Verbena, *q v.*

Vesicle, (ves'i-kl). [L. *vesica*, bladder.] A small bladder.

Vespa, (ves'pa). [The Latin name] Wasp: the type of Vespidæ *V crabro*: hornet.

Vespertilio, (ves per-til'i-ō) [The Latin name.] = Bat, *v* Cheiroptera.

Vespidæ, (ves'pi-dē). [Vespa, *q v.*, Gk. *eidos*, form] Social-wasps. a family of insects belonging to Hymenoptera.

Vesta, (ves'ta). [Classical] One of the asteroids.

Vesuvian, (ve-sō'vi-an) [Vesuvius.] = Idocrase a mineral of the garnet group.

Vetch, (vech). [*Vicia*, the Latin name.]=Vicia, *q v.* *Kidney V.*=Anthyllis. *Milk V.* =Astragalus.

Viaduct, (vī'a-dukt). [*Viaductus*, the Latin word.] A road, supported by a series of arches, crossing a valley, road, &c.: when crossing water = Bridge.


Viaduct

Vi, (vī) = Brazilian plum=Spondias dulcis.

Via lactea, (vī-a lak'te-a). [The Latin name] Milky-way, *q v*

Vibrations, (vī-brā'shunz). [L *vibro*, I swing.] Oscillations. *V. of sound*: in the direction of the wave, *V. of light*: perpendicular to the direction of the wave, in every direction. *V. of polarised light:* perpendicular to the direction of the wave, in one direction only.

Vibrio, (vī'bri-ō). [L. *vibro*, I vibrate.] A microscopic organism. *v.* Vibriones.

Vibriones, (vī-bri-ō'nēz), [Vibrio, *q.v.*] Very

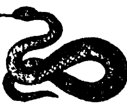
minute long filamentous bodies which live without oxygen, developed from bacteria.
Viburnum, (vi-ber'num) [The Latin name.] *v.* Guelder rose, &c.: shrubs and trees belonging to Caprifoliaceæ. *V. opulus:* Snowball tree.
Vicia, (vish'i-a) [The Latin name.]=Vetch, tare, &c.: an herb belonging to Fabaceæ.
Victoria stone = Silicated concrete: an hydraulic cement in alkaline solution of silica.
Victoria regia = Nymphæa alba.
Vigor's classification of birds—
Raptores.
Incessores.
Rasores.
Grallatores.
Natatores.


Victoria regia

Villi, (vil'li). [Villus, *q.v.*] Plural of villus.
Villus, (vil'lus) [L. *villus*, tuft of hair.] A vascular process; especially belonging to the chorion.
Vinca, (vin'ka). [The Latin name.]=Periwinkle: an herb belonging to Apocynaceæ.
Vine, (vin). [*Vinea*, the Latin name.] A plant, the type of Vitaceæ, the fruit of which is the grape. *V. disease*, oidium: a variety of white mould, belonging to Mucedines. *V.-worts* =Vitaceæ, *q.v.*


Vine.

Vinegar, (vin'e-gar) [*Vinaigre*, the French word.] An acid liquor, the base of which is acetic acid, obtained from beer, wine, &c., by acetic fermentation. *V. eel*=Anguillula aceti. *V. eels*=Nematoids. *V. fungus*, *v.* Mucedines.
Vinic ether=$C_4H_{10}O$=Ordinary ether.
Vinometer, (vi-nom'e-ter) An instrument for determining the purity of wine, by measuring its density.
Viola, (vī'o-la). [1 The Latin name; 2 The Italian name.]=1. Violet, pansy, &c.: an herb, with beautiful flower, the type of Violaceæ. 2. A large violin. *V. tricolour*= Heart's-ease.
Violaceæ, (vi-o-lā'se-ē). [Viola, *q.v.*]=Violet-worts: herbs and shrubs with polypetalous flowers belonging to Violales.
Violales, (vī-o-lā'lēz). [Viola, *q.v.*] Plants, with monodichlamydeous flowers, forming a division of Hypogynous Exogens.
Violet, (vī'o-let). [Viola, *q.v.*]=Viola, *q.v.* *Dane's V.*=Hesperis. *Water V.*=Hottonia.
Viper, (vī'per) [*Vipera*, the Latin name.]= Coluber berus = Vipera communis, *v.* Vipera. *Horned V.*=Acanthophis cerastinus.
Vipera, (vi'per-a). [The Latin name.] Viper: a snake, the type of the family Viperidæ. *V. aspis*=Asp.


Viper.

Virgin = Virgo, *q.v.* *V. bower* = Clematis. *Seven Vs.*=Pleiades, *q.v.*
Virginian, (ver-jin'i-an). *V. poplar*=Liriodendron.
Virgo, (ver-gō). [The Latin name.] 1 The Virgin: the sixth sign of the Zodiac. 2 The Virgin, one of the constellations of the Zodiac.



Virgo

Virus, (vī'rus) [L. *virus*, poison.] Contagious matter, such as of diseases, venom, &c.
Vis, (viz). [The Latin word.] = Force. *V. inertia*, *v.* Inertia. *V. viva*, *v.* Kinetic energy.
Viscera, (vis'er-a). [The Latin word.] Internal organs: contents of thorax, abdomen, &c.
Visceral, (vis'er-al). Belonging to the viscera. *V. arches:* found only in vertebrate animals.
Viscosity, (vis-cos'i-ti). [L. *viscidus*, sticky.] Viscidity: stickiness.
Viscum, (vis'kum). [The Latin name.]= Mistletoe: a twining parasitic herb belonging to Loranthaceæ.
Visible. *V. horizon:* the line in which sky and earth appear to meet.
Vision, (vizh'un) [*Visio*, the Latin word.] Sight: perception of external objects by means of the eyes.
Visual, (viz'ū-al). [Visio, *q.v.*] Relating to sight. *V. angle:* formed at the eye by the two straight lines coming from the extremities of the given object.
Vis viva=Kinetic energy, *q.v.*
Vitaceæ, (vi-tā'se-ē). [Vitis, *q.v.*]=Vine-worts: shrubs with small green flowers, the fruits of which are grapes, belonging to Berberales.
Vital food stuffs. Proteids, Amyloids, and Fats, which can be obtained only from animals or plants: substances containing oxygen, hydrogen, carbon, and sometimes nitrogen.
Vitellin, (vi-tel'lin). [Vitellus, *q.v.*] *v.* Albumenoid principles.
Vitello, (vi-tel'lō). A crater in the Moon, 24 miles in diameter.
Vitellus, (vi-tel'lus). [L. *vitellus*, yolk of egg.] =Amniotic sac: the inner integument of the ovule, between the embryo and cotyledon. =Yolk, or yelk, of an egg.
Vitex, (vī'teks). A plant belonging to Verbenaceæ.
Vitis, (vī'tis). [The Latin name.] Grapevine: a plant the type of Vitaceæ.
Vitreous. *V. copper:* a variety of chalcocite, *q.v.*, an ore of copper. *V. electricity*=Positive electricity: developed on glass by friction. *V. fusion:* gradual fusion; the intermediate soft condition of iron, glass, &c., between rigidity and fluidity. *V. humour:* fills the space between the cornea and crystalline lens of the eye. *V. lustre:* in glass, quartz, emerald, &c., with refractive index between 1·3 and 1·8.
Vitrification, (vit-ri-fi-kā'shun). [L. *vitrum*, glass, *facio*, I make.]=Vitrifaction: conversion into glass.
Vitrified, (vit'ri-fīd). [L. *vitreus*, glassy.] wholly or partially converted into glass.

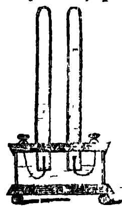
Vitriol, (vit'ri-ol). [The French word.]=Sulphate. *Blue V.*=Sulphate of copper. *White V.*=Sulphate of zinc. *Green V.*=Sulphate of iron. *Oil of V.*=Sulphuric acid.
Viverra, (vi-ver'ra). [The Latin name]=Civet, genet, coati, &c. *v.* Viverridæ. *V. ichneumon* = Ichneumon. *V. mellivora* = Honey ratel.
Viverridæ, (vi-ver'i-dē). [Viverra, *q.v.*; Gk. *eidos*, form.] A family of carnivorous animals belonging to Felidæ.
Vivianiaceæ, (vi-vi-an-i-ā'se-ē)=Vivianads: S. American herbs belonging to Malvales.
Vivianite, (viv'i-a-nīt). A mineral of the iron group, with oblique crystallisation, chiefly phosphate of iron.
Vivipara, (vi-vip'a-ra). De Blainville's term for Mammalia.
Viviparous, (vi-vip'a-rus). [L. *vivus*, alive, *pario*, I bring forth.] Producing offspring alive, the development of the embryo being considerably advanced before detachment.
Vizcacha. *v.* Lagostomus and Lagotis.
Vocal chords. Elastic cushions, whose edges form the sides of the glottis, which nearly close the aperture of the windpipe. *v.* Voice.
Vochyaceæ, (vok-i-ā'se-ē). [*Vochy*, the S. American name.]=Vochyads: shrubs and trees, with large showy flowers, belonging to Sapindales.
Vogt's classification of animals, according to the structure of the egg, and arrangement of organs.

- Vertebrata, with central yolk.
  - Mammalia.
    - Aplacentaria.
    - Placentaria.
  - Aves.
    - Insessores.
    - Autophagi.
  - Reptilia.
  - Amphibia.
  - Pisces.
- Articulata, with dorsal yolk.
  - Insecta.
  - Myriapoda.
  - Arachnida.
  - Crustacea.
- Cephalopoda, with cephalic yolk.
  - Cephalopoda.
- Mollusca, with organs irregularly disposed.
  - Cephalophora.
  - Acephala.
  - Tunicata.
  - Ctenophora.
  - Bryozoa.
- Vermes, with bilateral organs.
  - Annelida.
  - Rotatoria.
  - Platyelmia.
  - Nematelmia.
- Radiata, with radiate organs.
  - Echinodermata.
  - Siphonophora.
  - Hydromedusæ.
  - Polypi.
  - Infusoria. } Have no eggs.
  - Rhizopoda. }

Voice, (vois). [*Vox*, the Latin word.] Modifications of sound produced by the larynx: the larger the larynx the deeper the voice, owing to the slower vibrations of the vocal chords, or elastic bands, which nearly close the aperture of the windpipe.
Volatile, (vol'a-til). [*Volatilis*, the Latin word.] Evaporating readily. *V. liquid*, *v.* Liquid. *V. oils*=Essential oils, *q.v.*
Volcanic, (vol-kan'ik). [Volcano, *q.v.*] Relating to volcanoes. *V. formations*, *v.* V. rocks. *V. glass*=Obsidian, *q.v.* *V. rocks*: basalt, greenstone, granite; produced by action of heat, mostly unstratified and without fossils. *V. tuff*: a compound of sand, cinders, &c., resulting from volcanic action.
Volcano, (vol-kā'nō). [*Vulcano*, the Italian word.] An opening in the crust of the earth, through which lava, &c., is thrown out, becomes surrounded by lava, ashes, &c., until a mountain is gradually formed.


Volcano

Voltaic, (vol-tā'ik). [Signor Volta.] *V. arc*: the arc of light between the two poles of a Voltaic battery, or of an induction coil. *V. battery*: a number of Voltaic cells, couples, or elements, connected so as to act together. *V. current*=the current of chemical electricity. *V. couple*: two substances, one usually a metal, having different affinities for the liquid in which they are placed. *V. electricity*, *v.* Electricity. *V. pile*: a number of discs of copper and zinc, piled in uniform pairs between pieces of cloth moistened by diluted acid.
Volt, (volt). [Signor Volta.] *v.* Electro-magnetic units.
Voltameter, (vol-tam'e-ter). [Voltaic, *q.v.*; Gk. *metron*, measure.] An apparatus for measuring the force of a Voltaic current. *Faraday's V*: by which the quantity of water decomposed in a given time is made the measure of intensity.


Voltameter

Volumetric,(vol-ū-met'rik). [Volume, Gk. *metron*, measure.] Relating to measurement of volume. *V. analysis*: a variety of quantitative analysis, in which the quantity of a constituent of a compound is estimated by the volume of some solution which must be added to produce certain effects.
Volute, (vo-lūt'). [L. *volutum*, rolled.] A rolling or spiral curve or scroll.
Vomer, (vō'mer). [L. *vomer*, ploughshare.] A slender bone forming the centre of the nasal vertebra.
Vomicine, (vō'mi-sīn). [Nux Vomica, *q.v.*] =Brucine, *q.v.*
Von Baer's classification. *v.* Baer.
Von Siebold's classification. *v.* Siebold.

Vortex, (vor′teks). [The Latin word.] *v.* Eddy. *Ring V*, Ring-vortex, *q.v.*

Voussoirs, (voo-swawrz′). [The French word.] Wedge-shaped stones, &c., forming an arch.

Vulcan, (vul′kan). [Classical.] A supposed planet, probably seen in 1859 and in 1862, between the Sun and Mercury.

Vulcanicity, (vul-kan-is′i-ti). [Vulcan, god of fire.] *v.* Vulcanology and Seismology: volcanic energy: reaction of the interior of a planet upon its exterior.

Vulcanised, (vul′ka-nizd). *V. caoutchouc*: caoutchouc and sulphur combined by heat.

Vulcanists, (vul′ka-nists). [Vulcan, god of fire.]=Huttonians, *q.v.*

Vulcanite, (vul′ka-nit)=Ebonite—Vulcanized India-rubber, a hard, horny modification of caoutchouc.

Vulcanology, (vul-ka-nol′ō-ji). The science of the phenomena of high temperatures, such as fuse minerals.

Vulgar. *V. fractions*, *v.* Fractions.

Vulpecula et Anser. [The Latin name.]=The Fox and the Goose: a northern constellation formed in the 17th century.

Vulpes, (vul′pez). [The Latin name.] Fox, *q.v.*

Vulpine, (vul′pīn). [Vulpes, *q.v.*] Fox-like. *V. opossum*=Phalangista vulpina.


Vulture

Vulpinic acid, (vul-pin′ik)=Carmelochromine: a colouring matter obtained from the Wolves-lichen, Evernia vulpina.

Vulture, (vul′tūr). [*Vultur*, the Latin name.] A bird belonging to Raptores. *King V.*=Sarcorhamphus papam.

W.

Wacke, (wak′e). [The German word.] A clay-like rock, formed by the decomposition of basalt, &c.

Wad, 1.=Hydrated dioxide of manganese: an amorphous metallic mineral, resembling pyrolusite. 2. A local term for blacklead. 3. *v.* Wads.

Wadhurst clay. A sub-division of Hastings sand, in Wealden formation.

Wads. Used to keep shots steady in guns: made of oakum, rope, paper, coal-dust, &c.

Waggoner=Auriga, *q.v.*

Wagnerite, (wag′ner-īt). A mineral, chiefly chloride of magnesium.

Wagtail=Motacilla, *q.v.*


Wagtail

Wain, (wān). [*Wæn*, the A.-S. word.] *Charles's W.*=Ursa Major, *q.v.*

Wake-robin=Arum maculatum.

Walker's battery. A galvanic battery consisting of plates of zinc and graphite in dilute sulphuric acid, the graphite being roughened to allow of the ready escape of the evolved hydrogen.

Walking. *W.-stick insects*=Phasmidæ: insects resembling dried twigs. *W. leaves*=Phyllium: insects resembling leaves.

Wall. *W. butterfly*=Satyrus megæra. *W. cress*=Arabis. *W. flower*=Cheiranthus.

Wall-pepper=Sedum acre.

Walnut, (wawl′nut). [A.-S. *wealh*, foreign, *hnut*, nut.]=Juglans regia, *q.v.* *White W.*=Hickory.


Walrus.

Walrus, (wawl′rus). [D. *wal*, whale, *ros*, horse.]=Morse=Trichechus rosmarus: an aquatic animal belonging to Phocidæ.

Walter. A crater in the Moon, 70 miles in diameter.

Wanderoo, (won′der-ō). [*Wandern*, the German name.] A variety of Macacus: has a long mane, encircling the face.

Warbler, (wawr′bler)=Sylviadæ: a general name for a number of birds belonging to Dentirostres. *Marsh W.*=Salicaria palustris. *Reed W.*=Salicaria strepera. *Sedge W.*=Salicaria phragmitis.

Ware. *v.* Honey-ware.

Wargentin. A crater in the Moon, 53 miles in diameter.

Warmth,(wawrmth). [*Wearm*, the A.-S. word.] Tremulous molecular motion. *v.* Heat.

Warp, (wawrp). [A.-S. *weorpan*, to throw.] 1. An alluvial deposit obtained by allowing water to cover the land for some time. 2. The main threads of a textile fabric, *cf.* Weft.

Warrior's belt. Three bright stars, Alnitak, Alnilam, and Mintaka, in the constellation Orion.

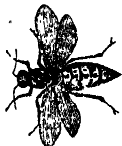

Wart-hog.

Wart, (wawrt). [*Weart*, the A.-S. word.] *W. cress*=Senebiera. *W. hog*=Phacochœrus æthiopicus.

Warts,(wawrts). [*Wearts*, the A.-S. word.] Small hard tumours formed on the skin.

Wash leather. *v.* Leather.

Wasp, (wosp). [*Wæsp*, the A.-S. name.]=Vespa: an insect belonging to Hymenoptera. *W. bees*=Nomada: wasp-like bees; also called Naked bees. *W. beetle*=Clytus arietis. *W. flies*=Eristalis.


Wasp

Wasps, (wosps). [Wasp, *q.v.*]=Vespidæ: a family of insects belonging to Hymenoptera. *Mason W.*=Odynerus murarius. *Solitary W.*=Eumenidæ.

Water, (waw′ter). [*Wæter*, the A.-S. word].

1. $=H_2O$: a compound of hydrogen and oxygen; liquid between 32° and 212° F., tasteless, inodorous, neutral, most extensively used as a solvent. 2. Term used for diamonds; those having the highest refracting power, and being as transparent as pure water, are diamonds of the "first water." *W. of crystallization*=Water which is absorbed by a salt in crystallising. *Hard W.*, v. Hard water. *Mineral W.*, v. Mineral waters. *Rain W.*=Pure water. *Soda W.*: water impregnated with carbonic acid. *Soft W.*=Rain water. *W. beans* = Nelumbiaceæ, *q.v.* *W. bears*= Arctisca, *q.v.* *W. beetle* = Dyticus, *q.v.* *W. birds*=Grallæ, Pinnatipedes, and Palmipedes. *W. boatman*=Notonecta glauca, *q.v.* *W. bugs*=Hydrocorisæ, *q.v.* *W. chestnut*= Trapa natans: a plant belonging to Onagraceæ. *W. colour*, v. Water colour. *W. cress* =Nasturtium officinale, *q.v.* *W. drop-wort*= Œnanthe, *q.v.* *W. flea*=Daphnia, *q.v.* *W. gas*: hydrogen obtained from water. *W. glass*, v. Water glass. *W. hemlock*=Cicuta, *q.v.* *W. leaf*= Hydrophyllum, *q.v.* *W. level*, a tube with turned-up ends, in both of which the contained water stands at the same level when the tube is horizontal. *W. Lily*. *Lesser W. L.* = Hydrocharis morsusranæ. *White W. L.* = Nymphæa, *q.v.* *Yellow W.L.* =Nuphar *q.v.* *W. Lilies* = Nymphæaceæ, *q.v.* *W. locust*=Gleditschia monosperma, *q.v.* *W. measurers* = Hydrometridæ, *q.v.* *W. milfoil* =Myrophyllum, belongs to Haloragaceæ. *W. mites* =Hydrachnidæ, *q.v.* *W. mole*= Ornithorhynchus, *q.v.* *W. net*=*W. flannel* =Hydrodictyon utriculatum: a sea-weed. *W. parsnip*=Sium, *q.v.* *W. pepper* 1.= Polygonum hydropiper; 2 =Elatine hydropiper. *W. peppers*=Elatinaceæ, *q.v.* *W. plantain*=Alisma, *q.v.* *W. purslane*=Peplis, *q.v.* *W. rat*=Mus amphibius. *W. salamanders*=Newts, *q.v.* *W. scorpion*=Nepa. *W. scorpions*=Nepidæ: belong to Hydrocorisæ. *W. shields* = Hydropeltidæ = Cabombaceæ, *q.v.* *W. slater*, v. Slaters. *W. snakes* = Hydrophidæ, *q.v.* *W. soldier*=Stratiotes, *q.v.* *W. spider*: 1.=Argyroneta aquatica; 2 =Hydrachna cruenta. *W. spout*, v. Gargoyle. *W. thyme*=Anacharis, *q.v.* *W. twist*=Frame, v. Mule. *W. vascular system*: a set of vessels found in Rotifera and other Scolecida, which ramify within the body, and communicate with the exterior by means of openings. *W. vine*=Phytocrene, *q.v.* *W. worms*=Naididæ, *q.v.* *W. wort*=Elatine, *q.v.* *W. worts*=Philydraceæ, *q.v.*



Water Lily

Water-colour painting. v. Painting.

Water-glass. A solution of silica in potassa or soda; used to form a protecting transparent coating for fresco and other paintings.

Watered. *W. silk*, v. Moire.

Watt's. *W. condenser*: in which the steam is condensed at a distance from the cylinder. *W. governor*, v. Governor.

Wattle=Acacia discolor: a plant of New Holland. *W. birds*: a variety of honey-eaters; also called Glaucopis.

Wave, (wāv) [*Weg*, the A.-S. word.] To and fro motion: alternate rise and fall of water in tides, &c. *W. theory of light*=Undulatory theory. *W. of sound*: undulation of air, v. Sound.

Wax, (waks) [*Waes*, the A.-S. word.] *Bees' W.*: secreted by bees. *Chinese W.*, v. Chinese wax. *Fossil W.*=Ozocerite, *q.v.* *Mineral W.*=Petrolene. *Sealing W.*: a mixture of shellac, turpentine, &c. *Tree W.*=Palmitin. *W. myrtle*=Myrica cerifera. *W. palm*=Ceroxylon andicola: a palm tree. *W. wing*: a bird, v. Bombycilla.



Wax-wing.

Way-bent. A variety of barley=Hordeum murinum.

Wayfaring tree = Viburnum lantana.

Wealden strata, (wēl'den). [Weald, in Kent and Sussex.] Fluviatile beds, forming the lower portion of the cretaceous formations, marked by large extent of heath land, and by large size of heather; also by numerous remains of reptiles. *Middle W.* =Hastings sand.

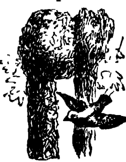
Weasel, (wē'zl). [*Wesle*, the A.-S. word.]= Mustela vulgaris: a burrowing nocturnal quadruped, belonging to Mustelidæ.



Weasel.

Weather, (weth'er). [*Weder*, the A.-S. word.] 1. A general term for the atmospherical conditions. 2. Inclination: as of the sails of a windmill to the plane of revolution. *W. beam*=To windward. *W. boarding* =Outer covering of sheds, &c., usually feather-edged. *W. harp* = Giant harp: a large Æolian harp, *q.v.*

Weaver. *W. bird*=Ploceus. *W. birds*: belonging to Ploceinæ, named from the elaborate character of the nests. *W. terebella*=Terebella textrix. *Tram Ws.*=Labyrinthulæ, *q.v.*



Weaver-bird

Websterite, (web'ster-īt). [Mr. Webster.]=Aluminite, *q.v.*

Wedge, (wej). [*Wecg*, the A.-S. word.] A double inclined plane; especially if of hard material: one of the mechanical powers.



Wedge

Wedgwood, (wej-wood). [Mr. Wedgwood.] *W. ware*: a fine variety of stoneware. *W.'s pyrometer*: in which temperature is measured by the contraction of baked clay.

Weed, (wēd). [*Weod*, the A.-S. word.] *Bind W.*=Convolvulus, *q.v.* *Cotton*

W.=Diotis, *q.v.* *Duck W.*=Lemna, *q.v.* *Gout W.*=Ægopodium, *q.v.* *Guinea-hen W.*=Petiveria, *q.v.* *Hawk W.*=Hieracium, *q.v.* *Hen W.*=Guinea-hen W., *q.v.* *Mat W.*=Nardus, *q.v.* *Mauritius W.*=Rocella fusiformis, *q.v.* *Shore W.*=Littorella, *q.v.*

Weeds *Duck W.*=Lemnaceæ, *q.v.* *Sea W.*=Algæ, *q.v.*

Week, (wēk) [*Wroce*, the A.-S. word.] A period of time equal to seven civil days.

Weeper. *W. monkey*, *v.* Cebus.

Weeping. *W. monkey*=Sajous=Cebus, *q.v.* *W. willow*=Salix Babylonica.

Weevil, (wē'vil). [*Wifel*, the A.-S. name.] *v.* Weevils. *Corn W.*=Calandra granaria. *Nut W.*=Balaninus nucum. *Rice W.*=Silophilus oryzæ.

Weeping-willow.

Weevils, (wē'vilz) [Weevil, *q.v.*]=Curculionidæ: insects belonging to Coleoptera=Rhynchophora.

Weft, (weft). [The A.-S. word.] The cross threads in a woven fabric. *cf.* Warp.

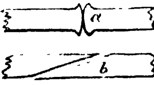
Weight, (wāt). [A.-S. *wegan*, to bear.] The force of gravitation acting on any given body is called its weight. *Hundred W.*=112 lbs avoirdupoise. *Unit of W.*, in Britain=Pound, *q.v.* in metric system=Gramme, *q.v.*

Weights and measures. *v.* Tables. *French W.*=Metric system, *q.v.*

Weir (wēr) [*Wer*, the A.-S. word.]=Dam, *q.v.*

Weld, (weld). [*Wad*, the A.-S. name.]=Reseda luteola.

Welding, (wel'ding). [*Wellen*, the German word.] Uniting two pieces of iron by heating and compression.



Modes of welding: *a*, butt-weld, or jumping-weld, *b*, scarf-weld.

Weld-worts, (weld'wert.s). [Weld and Wort, *q.v.*]=Resedaceæ, *q.v.*

Well. *Artesian W.*, *v.* Artesian wells.

Wellingtonia, (wel-ling-tō'ni-a)=Sequoia: a tree resembling the pine, found in Mexico, California, &c. *W. gigantea* discovered in California, 400 feet high, 110 feet in circumference.

Welsh, (welsh) *W. poppy*=Meconopsis. *q.v.*

Wen, (wen). [*Wenn*, the A.-S. word.] A small tumour.

Wernerian theory, (wer-nē'ri an) [Werner, of Freiburg.] In geology: that all the earth was covered by water, and that the rocks were precipitated as they are now found.

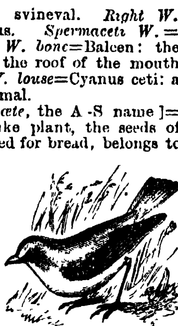
Wernerite, (wer'ner-it). [Werner, of Freiburg.]=Glaucolite, *q.v.*

Wenlock formation, (wen'lok) [W. in Shropshire.] Beds of limestone, forming a sub-division of Upper Silurian, also called Ballstone.

Whale, (hwāl) [*Hwal*, the A.-S. name.]=Balæna=Cetus: a large marine animal belonging to Cetacea. *Bottle-nosed W.*=Balæna rostrata. *Pilot W.*=Globiocephalus svineval. *Right W.*=Balæna mysticetus. *Spermaceti W.*=Physeter microps. *W. bone*=Baleen: the horny plates lining the roof of the mouth in some whales. *W. louse*=Cyanus ceti: a small crustacean animal.

Greenland Whale.

Wheat, (hwēt). [*Hwæte*, the A.-S. name.]=Triticum: a grass-like plant, the seeds of which are much used for bread, belongs to Hordeaceæ. *Cow W.*=Melampyrum. *W. ear*=Motacilla œnanthe=Saxicola œnanthe: a small bird. *W. fly*=Cecidomya tritici. *W. mildew*=Pucciniæi, belong to Coniomycetes.



Wheat-ear.

Wheatstone's bridge. [Sir C Wheatstone.] An apparatus for estimating the conductivity of a given substance for electricity.

Wheel, (hwēl). [*Hweol*, the A.-S. word.] One of the mechanical powers: a number of levers arranged radiately round a common centre. *Faraday's W.*, *v.* Faraday's wheel. *Face W.*, *v.* Face wheel. *Fly W.*, one having a heavy rim, which moderates a fluctuating force. *Marlborough W.*, *v.* Marlborough wheel. *Mitre W.*, *v.* Mitre wheels. *Knight's W.*, *v.* Knight's wheel. *W. animalcules*=Rotifera, *q.v.* *W. barometer:* a modification of the syphon barometer, in which the rise and fall of the column of mercury turns a wheel, and so indicates upon a dial plate the kind of weather to be expected. *W. train:* a number of wheels arranged in succession, so that the revolution of one causes the revolution of all. When the teeth of one wheel is an exact multiple of the teeth in the next, the same teeth come in contact frequently; if an odd tooth, called a hunting cog, be inserted in one wheel, this contact will occur as seldom as possible.

Whelks, (hwelks). [*Weolc*, the A.-S. name.]=Buccinidæ, *q.v.*

Whelp, (hwelp). [*Hwelp*, the A.-S. name.] The young of a dog, lion, etc.

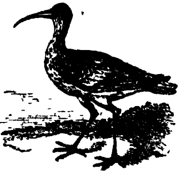
Whetstone, (hwet'stōn). Any hard fine-grained stone used for sharpening cutting tools.

Whewellite, (hwū'el-līt). [Dr. Whewell.] A mineral, chiefly oxalate of calcium.

Whey, (hwā). [*Hwaeg*, the A.-S. word.] A clear straw-coloured liquid: being what is left of milk when the casein and fatty matter are removed.

Whiff, (hwif). [*Chwiff*, the Welsh word.]=Rhombus, *q.v.*

Whimbrel, (hwim'brel) A variety of the curlew=Numenius phæopus.



Whimbrel.

Whin, (hwin). [W. *chwyn*, weed.]=

Genista, *q v.* *Petty W.* = Genista Anglica; also called Needle-furze. *W chat* = Saxicola rubetra.


Whin Chat

Whip-poor-will = Caprimulgus vociferus a bird named from its note.

Whip tongue=Galium aparine.

Whirl, (hwẹrl). [A.-S. *hwyr fan,* to turn.] = Eddy, *q v.*


Whip poor will

Whirligig beetles= Gyrinidæ: a family of water beetles.

Whirlwig = Whirligig beetle.

Whiskers, (hwis'kerz) [Ger *wisken,* to whisk.] Common to men and some of the apes

Whistle fish=Motella vulgaris, *q v.*

Whistle-mouth= Butterfly boiler

White. *W. ants*=Termes, *q v.* Not really ants; also called Soldiers. *W arsenic*=Arsenious acid. *W. bait* = Clupea-alba a small herring-like fish. *W. bream*=Abramis blicca. *W. butterflies* = Pieridæ


White bait

W cap=Microchera parvirostris the smallest humming bird. *W. cedar*=Melia azedarach. *W. crag*=Coralline crag an older Pliocene bed, found in Suffolk. *W of egg*=Glarin, *q v* *W. eyelid monkey:* resembles Cercopithecus. *W. flux:* a compound of potassic carbonate and nitre. *W garnet*=Leucite, *q v.* *W. gunpowder:* a variety of gunpowder, consisting of potassic chlorate, potassic ferro-cyanide and sugar. *W hellebore, v.* Hellebore. *W. indigo*=Indigogen, *q v.* *W. kangaroo, v.* Kangaroo *W. laurel*=Magnolia glauca. *W. lead*=Carbonate of lead= $PbCO_3$. *W. lead ore*=Cerussite *W. light*= Ordinary light. *W. mould*=Mucedines, *q v.* *W. mundic*=Mispickel, *q.v.* *W mustard*= Brassica alba=Sinapis alba. *W. pepper, v.* Pepper. *W. pigments:* obtained from lead, chalk, zinc, &c. *W. poplar* populus alba. *W. poppy, v.* Papaver. *W precipitate*= HgH_2NCl. chloride of ammonium, in which two equivalents of hydrogen are replaced by mercury. *W. race.* Teutons, Latins, Slavonians, Greeks, Libyans, Semitics, Persians, Georgians, and Circassians. *W. rot*= Hydrocotyle, *q v.* *W. rust*=Cystopus a fungus. *W. shark*=Carcharias vulgaris. the largest known shark. *W. stars.* Sirius, Regulus, Fomalhaut, Denebola, Polaris, Alpherat, Vega, &c. *W. thorn*=Cratægus. *W. throat*=Sylvia cinerea; also called Nettle-creeper. *W. vitriol*=Goslarite *q.v.* *W. wood*=Liriodendron, *q.v.* *W. worm*=Larva of cock-chafer.

Whiting, (hwit'ing). 1=Morrhua vulgaris= Merlangus=Gadus merlangus; a fish belonging to Gadidæ. 2=Soft white chalk, also called Spanish white.

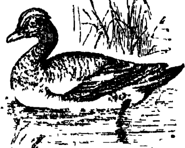

Whiting

Whitlow, (hwit'lō). [A -S *hwit,* white: *low,* fire] An inflammation of the fingers, sometimes of the toes. *W. grass*=Draba, *q.v.* *Vernal W. G* =Erophila, *q v.*

Whitworth gun has a hexagonal spiral bore. *v* Gun

Whortle-berry, (hwor-tl-ber'ri). [*Heortberg,* the A.-S. name]=Vaccinium myrtillus.

Widgeon, (wij'un). [*Vingeon,* the French name.] = Mareca Penelope = Anas Penelope: a duck-like bird


Widgeon

Widow-bird =Vidua paradisea: a bird belonging to Ploceinæ.

Wife. *Sea W.* = Acantholabrus Yarrellii: a fish

Wild. *W. apple*= Pyrus malus *W ass* = Onager = Asinus onager. *W. hyacinth*=Scilla nutans. *W. leek*=Allium ampeloprasum *W. lemon*= Podophyllum peltatum: has poisonous leaves. *W liquorice*=Ononis arvensis. *W. olive*= Oleaster

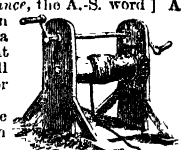
Williamson's blue = Ferrous potassic ferricyanide.

Willow, (wil'lō) [*Welig,* the A.-S word.]= Salix, *q v* *Goat W.*= Salix caprea. *Mountain W* = Salix myrsinites *Sea W.*=Gorgonia anceps: a coral polype. *W. herb*=Epilobium, *q v.* *W. leaves:* a name given to the small bright spots on the photosphere of the Sun, or in its atmosphere. *W. warbler*= Phylloscopus trochilus


Willow.

Willows=Salicaceæ, *q v.*

Winch, (winsh). [*Wince,* the A.-S. word] A cylinder revolving on its axis: resembles a solid wheel of great thickness and small diameter; used for raising weights, &c.


Winch

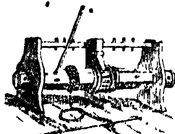
Wind, (wind). [The A.-S. word] Air in motion *v.* Winds. *Hurricane:* a violent wind moving at from 30 to 120 miles per hour. *Mistrale:* a N.-W. wind. *Simoom:* a hot dry wind *Sirocco:* a warm S. or S.-W. wind. *W. flower*=Anemone: the leaves of which are easily blown off.

Windage,(win'dāj). [Wind] Space between the internal surface of a gun and the projectile.

Windpipe=Trachea, *q.v.*

Winds, (windz). [Wind, *q.v.*] Air tides: the motion of the air consequent upon the action of the Sun. *Trade W., v.* Trade winds.

Windlass. An apparatus, resembling the winch, used for raising great weights, such as anchors, &c. *Chinese W.* = Differential screw, *q.v.*


Windlass.

Wine, (wīn). [*Win*, the A.-S. word.] The fermented juice of the grape. *British W.*: made from fruits common in Britain. *W. odour*: caused by the presence of œnanthic ether.

Winged. *W. horse*=Pegasus, *q.v.* *W. pea*= Tetragonolobus purpureus.

Wingshells=Strombidæ.

Wings, (wingz). [*Vængr*, the Icelandic word.] Modified fore-limbs, adapted for flight; *v.* Birds.

Winslow. *Foramen of W.*, *v.* Foramen.

Winter, (win'ter). [The A.-S. word.] *W. aconite*=Eranthis, *q.v.* *W. cherry*=Physalis alkekengi. *W. cress*=Barbarea, *q.v.* *W. green*=Pyrola, *q.v.* *Oil of W. green*=Gaultheric acid. *W. greens*=Pyrolaceæ, *q.v.* *W. season*, *v.* Seasons. *W. solstice*, *v.* Solstice.

Winteraceæ, (win-ter-ā'se-ē). [Captain Winter.] A family of aromatic plants belonging to Ranales.

Wipers=Tappets=Teeth on cams. *v.* Cam.

Wire. *W. worms*: larvæ of Elateridæ and other beetles; named from the shape.

Wisdom teeth. The end teeth of the upper jaw in man.

Witch. *W. hazels* = Hamamelidaceæ, *q.v.* *W. elm*=Ulmus montana.

Witherite, (with'er-it)=Native carbonate of barium, a poisonous mineral, crystallising in rhombs.

Withy, (with'i). [*Withig*, the A.-S. name.]= Salix fragilis: a variety of the willow.

Woad, (wōd). [*Wad*, the A.-S. name.] = Isatis tinctoria=Genista tinctoria: a plant from which a blue dye-stuff is obtained.


Woad

Wolf, (woolf). [*Wulf*, the A.-S. name.]= Lupus: an animal belonging to Carnivora. *Strand W.* = Hyæna villosa. *Tasmanian W.* = Canis dingo. *W. berry*=Symphoricarpus occidentalis. *W. dog*=Canis graius Hibernicus. *W. fish* =Anarrhichas lupus. *W. spider*=Lycosa= Tarantula. *W.'s bane*=Aconitum.


Wolf

Wolfram, (wool'fram). [The German word.] =Tungstate of iron: a native ore of tungsten, crystallising in rhombs.

Wolframium, (wool-frā'mi-um). [Wolfram.] =W=Tungsten, *q.v.*

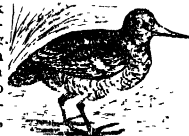
Wollaston's battery. [Dr. Wollaston.] A galvanic battery, consisting of a series of zinc and copper cells, so arranged that all the plates can be at once lifted from the liquid in the cells.

Wolverene, (wool've-rēn). [Wolf, *q.v.*]=Gulo luscus, *q.v.*; also called Glutton.

Womb, (woom). [The A.-S. word.]=Matrix: a general term for the uterus, or for any cavity in which generation takes place.

Wombat, (wŏm'bat). [Womb, *q.v.*]=Didelphis ursina: a marsupial animal.

Wood, (wood). [*Wudu*, the A.-S. word.] The hard vascular portion of the stem and branches of plants, between the bark and the pith; when in large pieces = Timber. *Heart W.*=Duramen, *q.v.* *Leather W.*, *v.* Leather wood. *Mountain W.*: a variety of asbestos. *Ornamental W. work*, *v.* Parquetry and Marquetry. *Sap W.*=Alburnum, *q.v.* *White W.* = Liriodendron, *q.v.* *W. ant*= Formica rufa. *W. apple*=Feronia elephantum. *W. avens* = Geum, *q.v.* *W. bine*= Honeysuckle=Lonicera periclymenum. *W. boring shrimp*=Chelura terebrans. *W. chuck*: a burrowing animal belonging to Rodentia. *W. cock*=Scolopax rusticola. *W. cutting*=W. engraving: a process by which a design is cut on a surface of wood, so that it can be transferred by printing, *v.* Xylography. *W. gas*: carburetted hydrogen obtained from wood. *W. humble bee*=Bombus lucorum. *W. iron*: a fibrous variety of chalybite, *q.v.*; also of limonite, *q.v.* *W. lice* = Isopoda, *q.v.* *W. louse* = Oniscus: belongs to Isopoda. *W. mites*= Oribatidæ, *q.v.* *W. mouse*=Mus sylvaticus. *W. naphtha*=Naphtha obtained from wood by distillation. *W. nymph* = Thalurania glaucopis: a humming bird. *W. opal*, silicified wood. *W. pecker* = Picus and other genera. *W. ruff*=Asperula odorata. *W. rush*=Luzula, *q.v.* *W. sorrel* = Oxalis, *q.v.* *W. spirit*=Caromol =Methyl alcohol. *W. tin*: tin ore with a fibrous woody appearance. *W. warbler*=Sylvia sylvicola =Phylloscopus sibilatrix.


Woodcock


Woodpecker.

Wool, (wool). [*Wull*, the A.-S. word.] The soft curly variety of hair found on sheep, &c.

Woolffian bodies, (wool fi-an). The primitive form of the urinary gland: they are absorbed as the kidneys (which they represent), are developed.

Woolly, (wool'li). [Wool, *q.v.*] Having the character of wool. *W. bear*=Larva of tiger moth. *W. lemur*: belongs to Indrisinæ.

Woolwich and Reading beds = Plastic clay. Beds of clay and sand belonging to Lower Eocene formations.

Woolwich gun. *v.* Gun.

Wootz, (wōtz)=Indian steel: a fine variety of steel.

Work. *Unit of W* : in Britain the power to raise 1 lb. through 1 foot of distance: the power to raise 33 000 lbs. weight through a distance of 1 foot in 1 minute is generally reckoned as the unit of horse-power.

Worm, (werm). [*Wyrm*, the A.-S. word.] *v.* Worms. *Bladder W.*=Hydatid, *q v. Fluke W.*, *v* Fluke. *Glow W.*=Lampyris noctiluca. *Guinea W.*, *v.* Guinea worm. *Lob W.*= *Earth W.*=Annelida terricola. *Slow W.*= Blind W., *q.v. Thread W.*=Oxyuris, *q v. W. tracks*=Helminthites, *v.* Lithichnozoa *W. wheel:* one having teeth on the edge adapted to fit the teeth on a screw or worm.

Worms, (wermz)=Annelidans: animals representing the lowest form of Articulata; having elongated bodies, formed of numerous rings, a soft integument, and feeble limbs. Used by Linnæus to include all known Invertebrata except insects *Earth W.*=Lumbrici. *Hair W.*=Gordiaceæ. *Mud W.*=Limicolæ. *Ribbon W.*=Nemertida, *q.v Sea W.*: belonging to Errantia, *q v. Water W.*=Naididæ, *q.v.*

Wormwood=Artemisia, *q.v.*

Wort, (wert). [Ger. *wurz*, plant] *Gipsy W.* =Lycopus. *Glass W.*=Salicornia. *Horn W.*=Ceratophyllum. *Lead W.*=Plumbago. *Liver W.*=Marchantia. *Madder W.*=Asperugo. *Moon W.*=Botrychium. *Mother W.*=Leonurus *Mud W.*=Limosella. *Pepper W.* = Lepidium. *Spear W.* = Ranunculus lingua. *Wound W.*=Stachys.

Worts, (werts). [Wort, *q.v.*] *Apple W.*= Pomaceæ. *Birch W.*=Betulaceæ *Butter W.* = Lentibulariaceæ. *Crown W.*=Malosherbiaceæ. *Ginger W.*=Zingiberaceæ. *Horn W.*=Ceratophyllaceæ. *Knot W.* = Illecebraceæ *Lead W.*=Plumbaginaceæ. *Lily W.*=Liliaceæ. *Liver W.*=Hepaticæ. *Madder W.*=Galiaceæ.

Wrack, (rak). *Grass W.*=Zostera, *q.v. Sea Ws.*=Zosteraceæ, *q v.*

Wrasse, (ras). [*Wrach*, the Welsh name.]= Rock-fish=Labrus, *q.v.*

Wrasses, (ras'ez) [Wrasse, *q.v*]= Cyclolabridæ=Labridæ, *q.v.*

Wren, (ren). [*Wrenna*, the A.-S name.]= Troglodytes vulgaris: a building bird. *Reed* W. =Salicaria strepera


Wren

Wrist, (rist) [The A.-S word]= Carpus the bones connecting the hand and arm.

Writing, (rīt'ing) [A.-S *writan*, to write] *Sculpture W.*=Hieroglyphics.

Written. *W. lichen*=Opegrapha scripta.

Wrought-iron=Soft iron: cast-iron rendered tough and malleable.

Wryneck=Yunx torquilla = Cuckoo's mate.

Wyandotte cave. In St. Louis Limestone, Crawford county, South-west Indiana

Wych elm = Witch elm, *q.v.*

Wurzel, (wer-zel). *v.* Mangel-wurzel


Wryneck.

X.

Xanthates, (zan'thāts). [Xanthic, *q.v.*] Compounds of xanthic acid and bases.

Xanthic acid, (zan'thik). [Gk. *xanthos*, yellow.]=$C_3H_6OS_2$: a vinic acid; also called Ethyl sulpho-carbonic acid.

Xanthin, (zan'thin). [Gk. *xanthos*, yellow] A yellow colouring matter obtained from flowers.

Xanthine, (zan'thin). [Gk. *xanthos*, yellow] =Xanthic oxide=$C_5H_4N_4O_2$: a white powder found in the brain, liver, &c., and in urinary calculi. *Hypo X.*=Xanthine with one atom less of O.

Xanthium, (zan'thi-um). [Gk. *xanthos*, yellow] An herb belonging to Asteraceæ.

Xanthophyll, (zan'thō-fil). [Gk. *xanthos*, yellow; *phyllon*, leaf] A bright yellow colouring matter found in leaves.

Xanthornis, (zan-thor'nis). [Gk. *xanthos*, yellow; *ornis*, bird.] A bird belonging to Sturnidæ.

Xanthorrhœa, (zan-tho-rē'a). [Gk *xanthos*, yellow]=Grass tree. a plant belonging to Liliaceæ. *X. arborea*=Botany Bay gum tree.

Xanthoxylaceæ, (zan-thoks-i-lā'se-ē). [Xanthoxylum, the typical genus.]=Xanthoxyds: trees and shrubs, chiefly tropical, belonging to Rutales.

Xebec, (zē'bek). [*Xebeque*, the Spanish name] A small three-masted vessel.


Xebec

Xenogenesis, (zen-ō-gen'-e-sis). [Gk *xenos*, stranger , Genesis, *q v.*]= Heterogenesis, *q.v. Examples of X.*: galls, tumours, corns, &c.

Xiphias, (zif'i-as). [Gk *xiphos*, sword.] Sword-fish: a fish belonging to Scombridæ, named from its long sword-like beak.

Xiphodon, (zif'ō-don). [Gk. *xiphos*, sword; *odous*, tooth.]=Anoplotherium gracile: fossil remains of which are found in Upper Eocene of France.

Xiphosura, (zif-ō-sū'ra) [Gk. *xiphos*, sword; *ura*, tail]= King crab, &c =Merostomata, *q v.*

Xylem, (zī'lem). [Gk. *xylon*, wood.] A constituent of fibro-vascular tissue, or wood, which consists of xylem and phlœm; xylem being more abundant in the wood of Exogens and phlœm in that of Lycopods.

Xylite, (zī'lit). [Gk. *xylon*, wood.] A mineral,

chiefly iron ore, also called Mountain-wood, *from its woody appearance.*

Xylo, (zī'lo). [Gk. *xylon*, wood.] A prefix implying some relation to wood.

Xylocopa, (zi-lok'o-pa) [Gk. *xylon*, wood, *kopto*, I cut.] Carpenter bees: insects belonging to Hymenoptera.

Xylography, (zī-log'ra-fi) [Gk *xylon*, wood; *grapho*, I write.] Wood-cutting, wood-engraving; the art of cutting designs on wood for the purpose of being printed. from

Xylol, (zī'lol) [Gk. *xylon*, wood.]=C_8H_{10}= Dimethyl benzol: a hydrocarbon obtained from wood-spirit.

Xylophagi, (zi-lof'a-ji). [Gk *xylon*, wood, *phago*, I eat.] =Timber-eaters=Hylesinidæ: a family of insects belonging to Coleoptera.

Xylopia, (zī-lō'pi-a). A plant belonging to Anonaceæ. *X. glabra*=Bitter wood.

Xylophylla, (zī-lof'il-a) [Gk. *xylon*, wood; *phullon*, leaf.] W. Indian plants, belonging to Euphorbiaceæ.

Xylyl, (zī'lil). [Gk. *xylon*, wood; *hyle*, material.] The radicle of the xylylic series of compounds, also called Formyl.

Xylylia=$C_8H_{11}N$: an oily base belonging to the aniline series.

Xyridaceæ, (zī-ri-dā'se-ē). [Xyris, the typical genus.]=Xyrids: herbaceous plants, chiefly tropical, with thread-like leaves and gay terminal flowers, belonging to Xyridales.

Xyridales, (zi-ri-dā'lēz) [Xyridaceæ, *q.v.*]= Water-worts, Spider-worts, &c.: plants with bisexual tripetaloid flowers, forming a division of Endogens.

Y.

Yacht, (yot). [*Jagt*, the Dutch word.] A sea-going vessel adapted for speed or for pleasure travelling.

Yak, (yak)=Poephagus: an ox-like animal, belonging to Bovidæ, found in Central Asia.

Yams. (yamz). [*Iname*, the W. Indian name.] 1. = Dioscoreaceæ, *q.v.* 2. The fruit: large fleshy tubers, much used for food.


Yam

Yapock, (ya'pok)=Didelphus palmata: a semi-aquatic marsupial animal.

Yard, (yard) [A.-S. *geard*, a measuring rod.] The standard measure of length = 36 in. = [illegible] of the length of a pendulum which oscillates once every second at the sea-level. *Golden Y.*, *v.* Orion.

Yarn, (yarn). [*Gearn*, the A.-S. word.] 1. Woollen threads. 2. A general term for thread, whether of wool, cotton, or linen.

Yarrow, (yar'rō) = Achillea millefolium: a plant belonging to Asteraceæ.

Yawl, (yawl) [*Jol*, the Dutch word.] A small launch, about 25 feet long, also called Jolly-boat.

Year, (yēr) [*Gear*, the A.-S. word.] The time required for one revolution of the Earth round the Sun. *Anomalistic Y.*=365 days 6 h. 13 m. 49.3 sec. *Civil Y.*=365 days 5 h. 48m. 49.7 sec. *Julian Y.*=*Gregorian Y.*= 365 days 6 h. *Sidereal Y.*: time of recurrence of a given fixed star in the same position= 365 days 6 h. 9 m. 9.6 sec. *Solar Y.*: interval between two passages through the vernal equinox=365 days 5 h. 48 m. 46 sec.

Yeast. (yēst). [*Gist*, the A.-S. word.]=Torulæ =Barm: minute fungi, belonging to Mucedines, reproduced by gemmation, used to produce alcoholic fermentation of sugar. *German Y.*: dried yeast, imported in cakes, obtained by the brewing of Bavarian beer.

Yelk, (yelk). [*Geolca*, the A. S. word.]= Vitellus, also called Yolk.

Yellow, (yel'lō) [*Geolu*, the A.-S. word.] One of the colours of the spectrum. *Indian Y.*= Euxanthate of magnesium. *Naples Y.*, *v.* Naples. *Y. balsam*, *v.* Impatiens. *Y. centaury*=Chlora, *q.v.* *Y. coralline*=Aurine, *q.v.* *Y. dyes:* obtained from fustic, morindin, turmeric, weld, &c. *Y. flag:* Iris pseudacorus. *Y. hammer*=Emberiza citrinella. *Y. light* exerts no chemical action, *v.* Actinism. *Y. metal*=Muntz's metal. *Y. ochre*: a clay coloured with oxide of iron, an earthy variety of limonite, *q.v.* *Y. pigments*: obtained from antimony, arsenic, chalk, chromium, lead, &c. *Y. race:* includes Chinese, Esquimaux, Japanese, Lapps, Mongols, &c. *Y. rattle*=Rhinanthus, *q.v.* *Y. snake*=Chilabrothrus inornatus. *Y. spot:* in the retina of the eye, *v.* Macula lutea and Foramen. *Y. stars:* Altair, Arcturus, Kocab, Polaris, Procyon, Rigel, &c. *Y. water-lily*= Nuphar, *q.v.* *Y. wort*=Y. centaury, *q.v.*

Yew, (ū). [*Eow*, the A.-S. name.]=Taxus, *q.v.*


Yew

-Yl, (il). [Gk. *hyle*, material.] A termination used for the names of chemical radicles.

Yorubans. An African people.

Yphantes, (i-fan'tēz). [Gk. *yphantes*, weaver.] A bird, *v.* Oriole.

Yponomenta, (ī-pon-ō-mū'ta) [Gk. *yponomeutes*, miner.]=Hyponomeuta: a moth. *Y. padella* = Ermine moth.

Yttria, (it'ri-a) [Ytterby, in Sweden.]=YO: oxide of yttrium, a rare earth.

Yttrium, (it'ri-um). [Yttria, *q.v.*]=Y: one of the earth metals; very rare.

Yucca, (yōk'ka). A plant belonging to Liliaceæ; also called Adam's needle.

Z.

Zaffre, (zaf'fer). A mineral: chiefly oxide of cobalt, also called Zaphara.

Zambo, (zam'bō). Offspring of red and black parents, also used for the child of a mulatto and a negro.

Zamboni's pile. A dry pile (*cf.* Pile), in which binoxide of manganese, and tin or silver are used.

Zamia, (zā'mi-a). [L. *zamia*, loss.] A tree belonging to Cycadaceæ. *Z. caffra*=Bread tree.

Zannichellia, (zan-i-chel'li-a). [Sig. Zannichelli.] Horned pond-weed: a plant belonging to Naiadaceæ.

Zanonia, (za-nō'ni-a). [Sig. Zanoni, of Bologna.] A plant belonging to Cucurbitaceæ. *Z. Indica*=Bandolier=Indian cucumber.

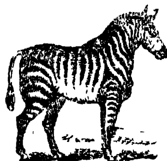
Zapornia, (za-por'ni-a). ... a bird belonging to Rallidæ.

Zea, (zē'a). [The Latin name.] A plant belonging to Gramineæ ... Maize and Indian corn.

Zealand. *New Z.* ... Phormium, *q.v.* ... *Z. porcupine*=Myrmecophaga ... meat ...

Zebeck ... Xebec.

Zebra (zē'bra). [The Spanish name.]=Asinus Zebra: a horse-like animal, white, with black bands, found in S. Africa.



Zebra

Zebu, (zē-boo'). [The Hindoo name.]=Bos Indicus: an ox-like animal belonging to Bovidæ.



Zebu

Zechstein=Minestone: the German representative of Upper Permian strata.

Zenith, (zen'ith). [Corruption of Arabic *Semt-ar-ras*, vertical place.] The point of the heavens directly overhead: *cf.* Nadir. *Z. distance*=Angular distance from the zenith.

Zeolites, (zē'ō-līts). [Gk. *zeo*, to boil.] Silicates of alumina, lime, &c., which boil when strongly heated. *Needle Z.*=Natrolite. *Z. group of minerals:* includes analcite, natrolite, stilbite, and chabazite; silicates of alumina, &c., found in volcanic districts.

Zero, (zē'rō). [It. *zero*, naught.] In Centigrade and Reaumur's scales=Freezing point of water: in Fahrenheit's scale=32° below freezing point of water. *Absolute Z.*= −273° C., at which temperature any given body is supposed to contain no heat. Generally, zero is 0° of any scale.

Zeuglodon, (zū'glo-don). [Gk. *zeugle*, yoke-strap; *odous*, tooth.]=Basilosaurus: an extinct cetacean animal, about 70 ft. long, whose teeth were in two groups united by a band: known by fossil remains, found in Eocene strata of America.

Zeus, (zē-us). A fish belonging to Scombridæ. *Z. faber*=Dory.

Zinc, (zingk). [*Zink*, the German word.]= Zn''=Spelter: one of the magnesian metals; a hard bluish crystalline metal, much used to coat sheet-iron with, and as a constituent in brass. *Z. carbon battery*=Bunsen's battery. *Z. ethyl*= $Zn(C_2H_5)_2$: an odorous transparent liquid, which ignites in contact with air. *Z. glance*=Siliceous calamine. *Z. group of minerals:* includes calamine, smithsonite, and blende. *Z. methyl*= $Zn(CH_3)_2$: a volatile strongly odorous liquid, which takes fire in contact with air, and explodes in oxygen. *Z. spar*=Calamine.

Zincic, (zin'sik). [Zinc, *q.v.*] Related to zinc. *Z. sulphide*=Blende.

Zincography, (zing-kog'ra-fi). [Zinc, *q.v.*, Gk. *grapho*, I write.] Engraving on zinc plates, used for printing maps, plans, writings, &c. *Photo-Z.*: a process by which a photographic print is transferred to a zinc plate, and engraved for printing from.

Zingari=Gipsies, *q.v.*

Zingiber (zin'ji-ber). [The Latin name.]= Ginger: a tree belonging to Zingiberaceæ.

Zingiberaceæ, (zin-jib'er-ā-se-ē). [Zingiber, *q.v.*] Ginger-worts: herbaceous aromatic plants, with creeping rhizome, and gay flowers, belonging to Amomales.

Ziphius. A cetacean animal.

Zircon, (zer'kon). [The Cingalese word.]= Zirconic silicate: a mineral from which zirconium is obtained.

Zirconia, (zer-ko'ni-a). [Zircon, *q.v.*]= ZrO_2: oxide of zirconium.

Zirconium, (zer-ko'ni-um). [Zircon, *q.v.*]= Zr'''': one of the silicon group of elements; a rare metal.

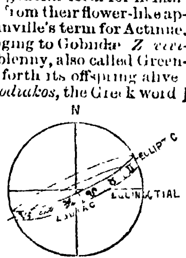
Zoa, (zō'a). [Gk. *zoon*, animal.] Aristotle's term for all animals.

Zoanthida, (zō-anth'i-da). [Gk. *zoon*, animal; *anthos*, flower; *eido*, form.] Intermediate between Acrita and Radiata in M'Leay's arrangement, *q.v.*

Zoantharia, (zō-an-thā'ri-a). [Gk. *zoon*, animal; *anthos*, flower.] 1. A general term for helianthoid polypes, named from their flower-like appearance. 2. De Blainville's term for Actiniæ.

Zoarces. A fish belonging to Gobiidæ. *Z. viviparus*=Viviparous blenny, also called Greenbone, which brings forth its offspring alive.

Zodiac, (zō'di-ak). [*Zodiakos*, the Greek word.] A zone of the heavens, which includes all the apparent motions of the Sun, Moon, and greater planets. It is divided into twelve equal portions, each called a sign, of these the names are as follows, three belonging to each



Zodiac

season. *Spring:* Aries, Taurus, Gemini. *Summer:* Cancer, Leo, Virgo. *Autumn:* Libra, Scorpio, Sagittarius *Winter:* Capricorn, Aquarius, Pisces. The signs and the constellations of the Zodiac do not now agree, owing to the precession of the equinoxes.

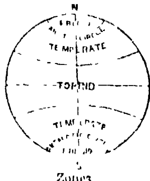
Zodiacal, (zō-dī'a-kal) [Zodiac, *q.v.*] *Z. light:* a ring of nebulous matter seen near the ecliptic. *Z. constellations* the twelve constellations through which the Sun passes, at one time identical with the signs of the Zodiac, and having still the same names

Zoea, (zō-ē'a). [Gk. *zoe*, life.]=Zoe the earliest form of shore-crab, has two sessile eyes

Zoisite, (zō'i-sīt) A dark variety of epidote.

Zonary placenta, (zō'na-ri). [Gk. *zone*, belt.] A deciduous placenta, in which the villi of the chorion are arranged in a zone or belt

Zones of the earth. *Torrid Z:* the central zone, extending 23½° N. and S. of the equator. *Two frigid Zs.* extending 23½° round the poles *Two temperate Zs:* between the torrid and frigid zones.



Zones

Zones of life. *Littoral:* between high and low watermarks. *Laminarian:* between low water and 15 fathoms. *Coralline:* between 15 and 50 fathoms *Deep Sea Coral.* below 50 fathoms.

Zooid, (zō'oid). [Gk. *zoon*, animal, *eidos*, form.] A general term for any organisms, such as polyps, *q.v.* the individual organism produced by gemmation.

Zoological anatomy. The science of the general structure and adaptation of animals

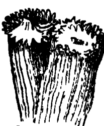
Zoology, (zō-ol'ō-ji) [Gk. *zoon*, animal; *logos*, discourse.] The science of animal life: the branch of biology relating to the nature and habit of animals *Z. of birds*=Ornithology. *Z. of fishes*=Ichthyology. *Z. of insects*=Entomology.

Zoon, (zō-on). [Gk. *zoon*, animal.] An individual animal, whether mammal, bird, &c., or a number of zooids.

Zoophagoida, (zō-of-a-goi'da) [Gk. *zoon*, animal, *phago*, I eat.] Beings subsisting on animal and azotised vegetable food.

Zoophyta, (zō-of'i-ta). [Gk. *zoon*, animal, *phyton*, plant.] A general term for radiate animals, or for those having any resemblance in form to plants *v.* Zoophytes.

Zoophytes, (zō-o-fīts). [Gk. *zoon*, animal, *phyton*, plant.]=Protozoa and Cœlenterata: first used to express the plant-like form of animal life: sometimes mistaken to mean something intermediate between plants and animals. *Glass Zs.* =Hyalonemadæ, *q.v.* *Hydroid Zs.*= Hydroida, *q.v.*


Zoophyte.

Zoospores, (zō-os-pōrz). [Gk. *zoon*, animal: *spora*, seed.] Bulb-like products of vegetative growth, in algæ, moulds, &c.

Zoothome, (zō'ō-thōm). [Gk. *zoon*, animal: *thomos*, heap.] The compound animal mass of coral polyps: a living sheet of animal matter, fed and nourished by numerous mouths and as many stomachs; formerly called Zoophyte.

Zootica, (zō-ot'i-ka). A lizard belonging to Lacerta, *q.v.* *Z. vivipara*=Scaly lizard.

Zootoka, (zō-ot'o-ka). Used by Owen as equivalent to Mammalia.

Zootomy, (zō-ot'o-mi). [Gk. *zoon*, animal. *tome*, section.] Anatomy of animals as distinct from that of the human body. *Z. of birds*= Ornithotomy *Z. of insects*=Entomotomy. *cf.* Phytotomy.

Zoroaster. A bright scarlet star-fish, first discovered in 1869.

Zostera, (zos'ter-a) [Gk. *zoster*, girdle.]=Grass wrack: a plant belonging to Zosteraceæ.

Zosteraceæ, (zos-ter-ā'se-e). [Zostera, *q.v.*]= Sea-wracks marine plants, resembling seaweeds, with small naked flowers, found at the bottom of the sea

Zygæna, (zī-gē'na). *Z. malleus*=Hammer-headed shark

Zygantrum, (zī-gan'trum). [Gk. *zygon*, yoke; *antrum*, cave.] A cavity in the vertebræ of serpents.

Zygapophysis, (zī-ga-pof'i-sis). [Gk. *zygon*, yoke, *apophysis*, outgrowth.] Processes of vertebræ, by means of which they are connected.

Zygoma, (zī-gō'ma) [Gk *zygonu*, yoke.] The arch at the side of the skull.

Zygophyllaceæ, (zi-gō-fil-lā'se-ē) [Zygophyllum, typical genus.]=Bean capers trees and shrubs, with very hard wood, belonging to Rutales.

Zygopteris, (zī-gop'ter-is). A fossil leaf stalk.

Zygosphene, (zi'gō-sfēn) [Gk. *zygon*, yoke; *sphen*, wedge.] A wedge-like projection of the vertebræ of snakes.

Zygospore, (zi'gō-spōr) [Gk. *zygon*, yoke; *spora*, seed.] Formed of small cells breaking into one larger, as in fungi.

Zymotic diseases, (zī-mot'ik). [Gk. *zymosis*, fermentation.] Those communicable by contagion of a fermentable virus.

TABLES.

MEASURES OF WEIGHT.

Avoirdupoise Weight

Used for all goods sold by weight, excepting gold, silver, and gems.

	cwts	qr	pounds	ounces	drams
1 ton.	= 20 =	80 =	2240 =	35,840 =	573,440
1 cwt.		= 4 =	112 =	1792 =	28,672
1 quarter			28 =	448 =	7168
1 stone			14 =	224 =	3584
1 pound				16 =	256
1 ounce					16

Troy Weight.

Used for weighing gold, silver, and precious stones.

	ounces	drams	scruples	grains
1 pound	= 12 =	96 =	288 =	5760
1 ounce		= 8 =	24 =	480
1 dram			= 3 =	60
1 scruple				20

Apothecaries' Weight

Used in the preparation of drugs for medical use.

	ounces	drams	scruples	grains
1 pound	= 12 =	96 =	288 =	5760
1 ounce		= 8 =	24 =	480
1 dram			= 3 =	60
1 scruple				20

The pound, ounce, and grain, are alike in Troy and Apothecaries' Weight.

Long Measure.

Used for measurement of length only.

	furs. chns. pls.	yards	feet	inches
1 mile	=8=80=320 =	1760 =	5280 =	63,360
1 furlong	=10= 40 =	220 =	660 =	7920
1 chain	4 =	22 =	66 =	792
1 perch		5½ =	16½ =	198
1 yard			3 =	36
1 foot				12

1 league =3 miles.
1 fathom =2 yards.
1 hand..=4 ins. (used in horse measurement).

CLOTH MEASURE.

	quarter	nails	inches
1 yard	= 4 =	16 =	36
1 quarter		= 4 =	9
1 nail			2¼

An ell = 1¼ yards.
A French ell = 1½ yards.

SOLID MEASURE,

(Also called Cubic Measure)

1 cubic yard ... ... = 27 cubic feet
1 cubic foot ... ... = 1728 cubic inches.
42 cubic feet = 1 ton, as a measurement of the capacity of a ship for cargo.

METRIC SYSTEM.

These numbers are given to only two places of decimals the others can mostly be inferred from these.

Measures of Length.

	feet	inches
Metre	= 3.280	= 39.370
Decimeter	= 0.328	= 3.937
Centimetre	= 0.032	= 0.393
Millimetre	= 0.003	= 0.039

The Decametre = nearly 11 yards.
The Hectometre = 109¼ yards.
The Kilometre = nearly ⅝ of a mile.
The Myriametre = nearly 6¼ miles.

Measures of Surface

The Are = 100 sq metres = 4 sq poles nearly.
The Hectare = 10 000 ,, = 2½ acres ,,
The Centiare = 1 ,, = 10¾ sq. feet ,,

Measures of Capacity

The Litre ..... = 1¾ pints nearly.
The Deca litre = 2¼ gallons ,,
The Hecto litre .. = 22 ,, ,,
The Kilo litre, or Stere .... = 2¾ bushels nearly;
The Myrio-litre .. = 275 bushels nearly.

Measures of Weight.

The Gramme.... = 15½ grains nearly.
The Decagramme = ⅓ of an ounce troy nearly.
The Hectogramme = 3½ ,, ,,
The Kilogramme = 2⅕ lbs avoirdupoise.
The Myriagramme = ⅕ cwt. nearly.

NOMENCLATURE OF CLASSIFICATION.

BOTANICAL.

All Plants being grouped as

The Vegetable Kingdom,

This is divided into .... Classes
Each Class into .... Orders.
Each Order into .... Families.
Each Family into .... Genera.
Each Genera into .... Species.

Sub-divisions of Species are called Varieties.

ZOOLOGICAL.

All Animals being grouped as

The Animal Kingdom.

This is divided into... ....Divisions.
Each Division being sub-divided into Classes.
Each Class ,, ,, Orders.
Each Order ,, ,, Families.
Each Family ,, ,, Genera.
Each Genera ,, ,, Species.

Sub-divisions of Species are called Varieties.

Many other terms—e.g., Sub-class, Sub-family, etc.; Tribe, Alliance, etc., are used in the various systems of classification in Biology.

NOMENCLATURE OF CLASSIFICATION.

ANTHROPOLOGICAL.

The human race has been classified by many writers, some of these classifications are here give in outline.

By Blumenbach.

Caucasian.	Malayan.
Mongolian.	American.
Negro.	

By Buffon.

Lapps.	Ethiopians.
Tartars.	Negroes.
Chinese.	Kaffirs.
Malays.	Hottentots.
Hindoos.	Esquimaux.
Georgians	American Indians.

By G. Cuvier.

Caucasian or white race.	Syrian	Assyrians, Arabs, Jews, Egyptians, &c.
	Indo-Germanic and Pelasgic.	Hindoos, Persians, Celts, Greeks, Latins, &c
	Scythian and Tartaric.	Scythians, Turks, Hungarians, Tartars, &c.
Mongolic or yellow race.	Kalmucks. Chinese. Japanese. Kamtschatka.	
Ethiopic or black race	Africans of South Africa.	
Mixed races.	Malays, Polynesians, Esquimaux, American Indians, &c.	

By Linnæus.

European or white.	African or black
Asiatic or yellow.	American or brown.

By Maury.

White race—Arabs, Jews, Hindoos, Europeans.
Red race—Californians, Mexicans, Patagonians, &c.
Northern race—Esquimaux, Finns, &c.
Malay-Polynesian race—Malays, Polynesians, &c.
Yellow race — Mongol, Chinese, Thibetans, Turks.
Australian race—Papous, Australians, &c.
Hottentot race—Hottentots, &c.
Egypto-Berber race—Egyptians, Abyssinians, Berbers, &c.
Negro race—Dahomans, Caffres, &c.

By Quatrefages.

White or Caucasian	Arian ..	Hindoos, Greeks, Slavs, Celts, Scandinavians
	Semitic.	Chaldees, Arabs, Egyptians, &c.
	Allophyletique	American, Asiatic, Caucasian, Finns, &c.
Yellow or Mongolic.	Turanian, Chinese, &c. Esquimaux, &c.	
Negro or Ethiopic.	Kaffirs, Negroes, Papouans, &c.	
Mixed races	Americans, Japanese, Polynesians, Australians, &c.	

Other classifications have been made by Pritchard, Latham, &c.

CHEMICAL.

Compound substances have sometimes names formed by combining the names of the contained elements, as hydro-chloric, hydro-potassic, &c.

Metals have names ending in *um*, as thallium, sodium, &c.

Acids have names terminating in *ic*, as sulphuric, citric, oxalic, &c., when the termination *ic* is given to a substance containing the highest known quantity of oxygen or chlorine, as sulphuric, chloric, &c.

The termination *ous* is used for similar substances containing less oxygen or chlorine, as sulphurous, chlorous, &c.

GEOLOGICAL.

Neozoic....	Post Tertiary		Recent and Post-Pliocene.
	Tertiary or Cainozoic	Pliocene.. ..	Divided into Newer and Older.
		Miocene	Divided into Upper and Lower.
		Eocene..	Divided into Upper, Middle, and Lower.
	Secondary or Mesozoic	Cretaceous .. .	Mæstricht, Chalk, Chloritic, Gault, Neocomian, and Wealden.
		Jurassic	Purbeck, Portland, Kimmeridge Clay, Coral Reef, Oxford Clay, Oolite, and Lias.
		Trias	Divided into Upper, Middle, and Lower.
Palæozoic .	Primary or Palæozoic	Permian	
		Carboniferous.	Coal Measures and Carboniferous Limestone.
		Devonian	Divided into Upper, Middle, and Lower.
		Silurian	Divided into Upper and Lower
		Cambrian	Divided into Upper and Lower.
		Laurentian ...	Divided into Upper and Lower.